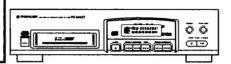


Service



ORDER NO. **RRV1062**

MULTI-PLAY COMPACT DISC PLAYER

PD-M403

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Time	Мо	del	Power Requirement	Remarks
Туре	PD-M423	PD-M403	Power Requirement Remarks	
KUXJ	0	0	AC120V	
KCXJ	0	0	AC120V	

CONTENTS

1.	SAFETY INFORMATION2
2.	PACKING AND PARTS LIST3
3.	EXPLODED VIEWS AND PARTS LIST4
4.	BLOCK DIAGRAM10
5.	SCHEMATIC DIAGRAM11
6.	PCB CONNECTION DIAGRAM17
7.	PCB PARTS LIST23
8.	ADJUSTMENTS25
9.	IC INFORMATION34
10.	FL INFORMATION39
11.	FOR PD-M423/KCXJ, PD-M403/KUXJ
	AND KCXJ40
12.	PANEL FACILITIES41
13.	SPECIFICATIONS42

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.

PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada

PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

© PIONEER ELECTRONIC CORPORATION 1994

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols - (fast operating fuse) and/or - (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou - (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

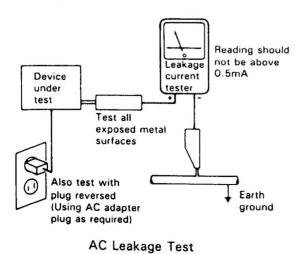
-(FOR USA MODEL ONLY)-

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. PACKING AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "O" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List

Mark No.	Description	Part No.	Mark	No.	Description	Part No.
1	Connection Cord with	PDE - 319		9	CD Packing Case	PHG1999
2	Mini Plug (for SR cord) Connection Cord with	PDE1109		10	Mirror Mat Sheet	Z23 – 007
3	Pin Plug (for Audio) Remote Control Unit	PWW1089	NSP	101	Dry Cell Battery (R03, AAA)	VEM - 022
4	Battery Cover	PZN1010			(1100, 11111)	
5	Magazine Assy	PXA1523				
6	Operating Instructions (English)	PRB1205				
7 8	Styrol Protector (F) Styrol Protector (R)	PHA1276 PHA1277				2
	7				3 101	8

3. EXPLODED VIEWS AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "O" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

3.1 EXTERIOR

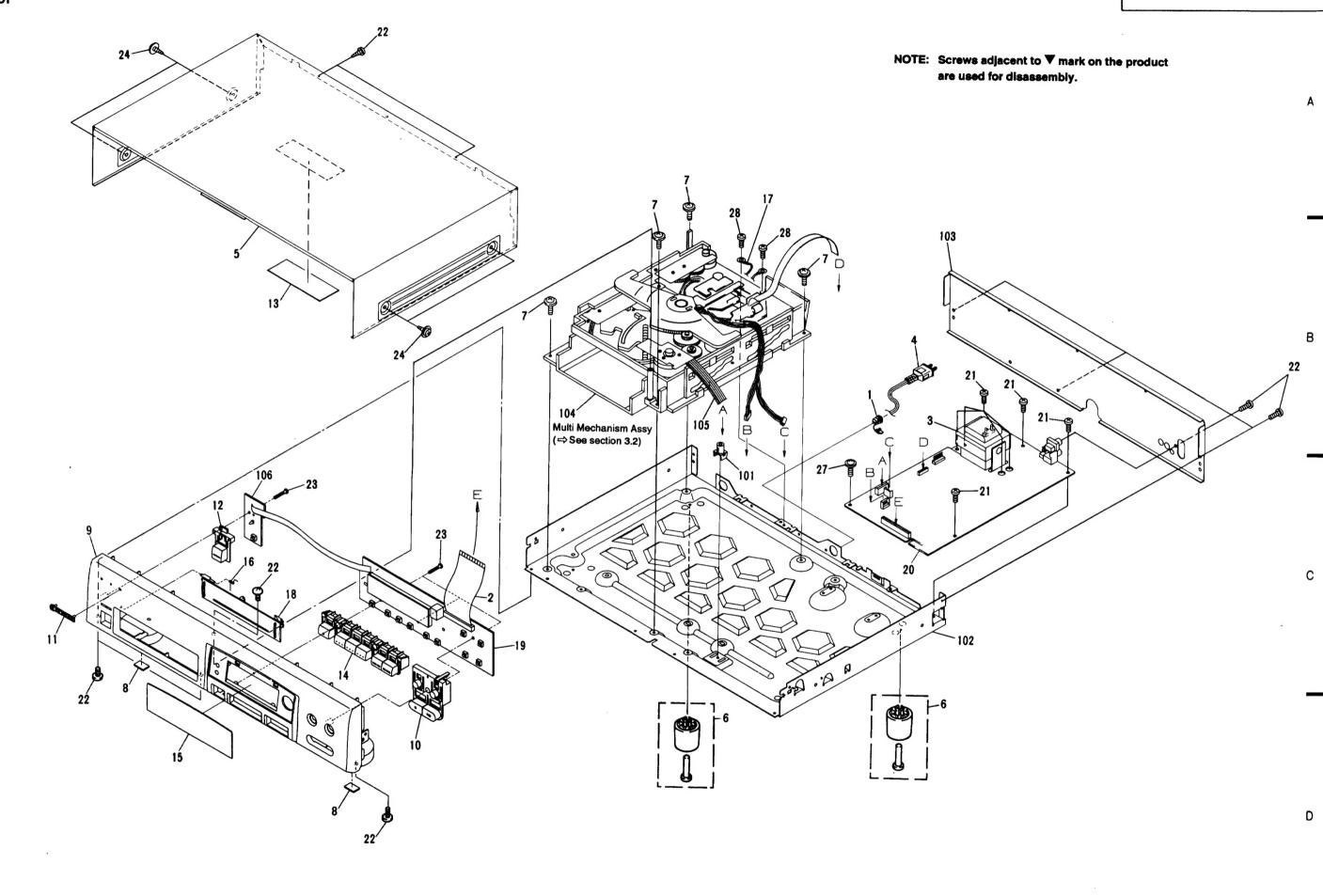
Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
Δ	1	Strain Relief	CM - 22C	NSP	101	PCB Mould	AMR1525
	2	32P F.F.C/30V	PDD1041	NSP	102	Under Base	PNA1751
Δ	3	Power Transformer	PTT1237	NSP	103	Rear Base	PNA2068
$\overline{\Lambda}$	4	Power Cord with Plug	PDG1015	NSP	104	Multi Mechanism Assy	PXA1532
	5	Bonnet	PYY1149	NSP	105	Flat Cable (6P)	D20PYY0615E
	6	Foot Assy	AEC1531	NSP	106	Switch Board Assy	PWZ2804
	7	Screw	IBZ30P080FCC				
	8	Rubber Sheet	AEB1111				
	9	Function Panel	PNW2387				
	10	Play Button	PAC1766				
	11	Name Plate	PAM1608				
	12	Power Button	PAC1719				
	13	65 Label	ORW1069				
	14	Track Button	PAC1765				
	15	Display Window	PAM1635				
	16	Spring (Door)	PBH1022				
	17	Earth Lead Unit	XDF - 502				
	18	Door	PNW2264				
	19	Function Board Assy	PWZ2769				
Δ	20	Mother Board Assy	PWM1858				
	21	Screw	BBZ30P060FMC				
	22	Screw	BBZ30P080FZK				
	23	Screw	PPZ30P120FMC				
	24	Screw	FBT40P080FZK				
	25						
	26						
	27	Screw	IBZ30P180FMC				
	28	Screw	PDZ30P050FMC				

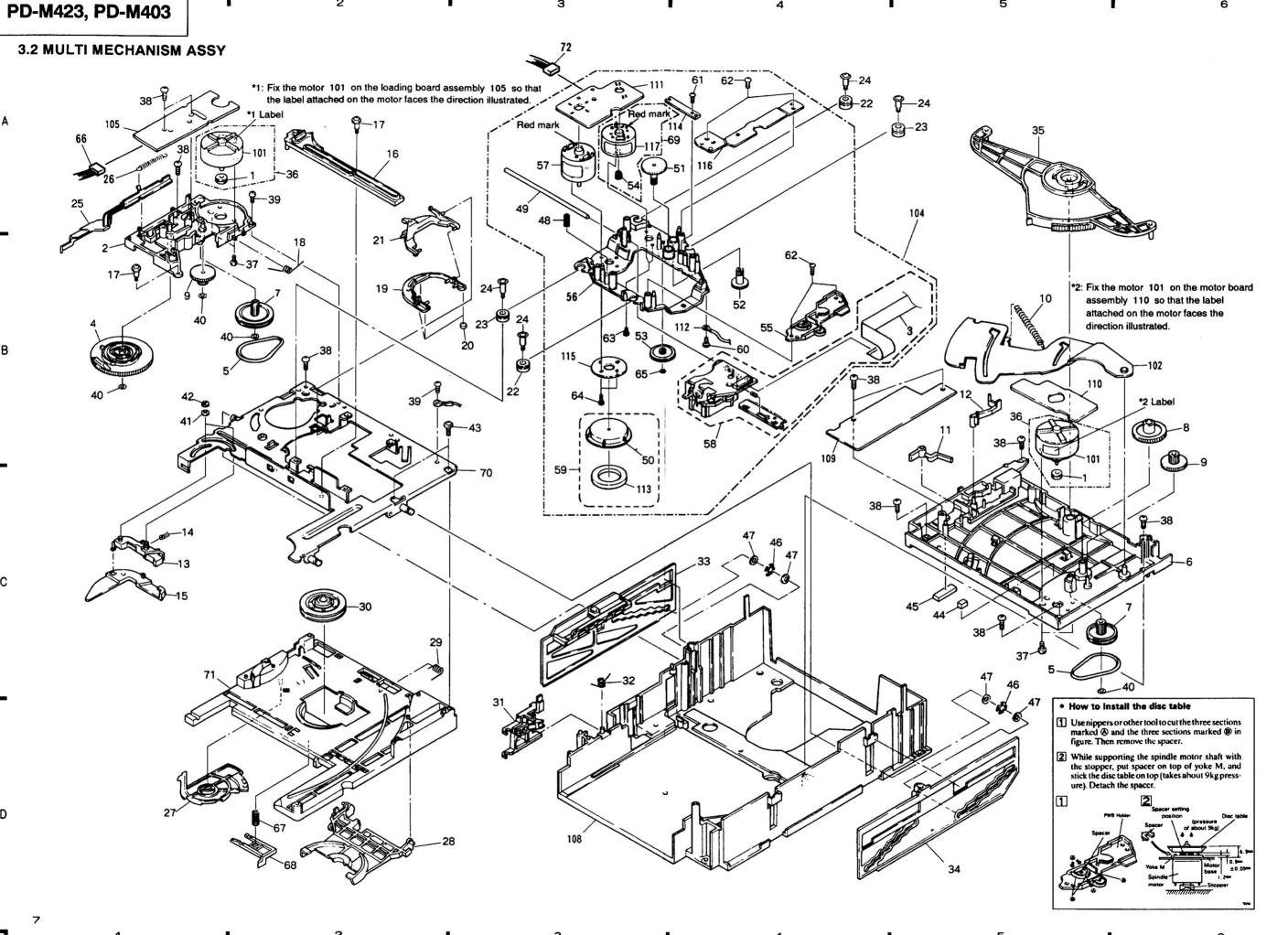
D

2

3



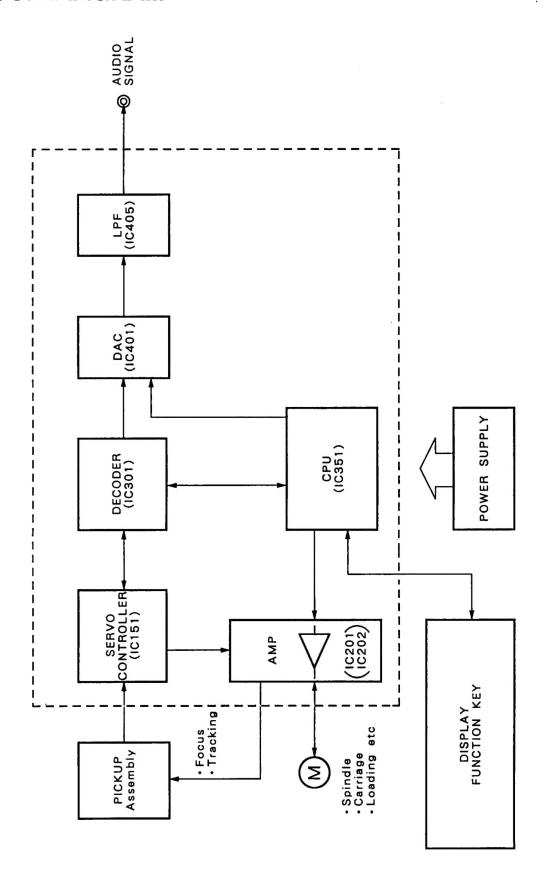
6



Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Motor Pulley	PNW1634		49	Guide Bar	PLA1094
	2	Gear Holder	PNW1929		50	Disc Table	PNW1067
					51	Gear 1	PNW2052
	3	PU Frexible Cable	PNP1343			-	
	4	Cam Gear	PNW1923		52	Gear 2	PNW2053
	5	Belt	PEB1138		53	Gear 3	PNW2054
	6	Top Guide N	PNW2441		54	Pinion Gear	PNW2055
	7	Gear Pulley	PNW1918		55	PWB Holder	PNW2057
	8	Gear S	PNW1919		56	Carriage Base	PNW2445
	9	Gear L	PNW1920		57	D.C. Motor Assy	PEA1235
	10	Eject Spring	PBH1107			(spindle with oil)	
	11	Switch Lever	PNW1927		58	Pickup Assy	PEA1291
	12	Seven Bar	PNW1931		59	Disc Table Assy	PEA1035
	13	Sub Rotary Lever	PNW1933		60	Screw	BBZ26P060FMC
	14	Sub Rotary Lever Spring	PBH1111		61	Screw	BPZ20P060FMC
	15	Rotary Lever	PNW1932		62	Screw	BPZ26P100FMC
	16	Drive Plate	PNW1930		63	Screw	JFZ17P025FZK
	17	Motor Screw	PBA-112		64	Screw	JFZ20P040FMC
	18	Holder Lever Spring	PBH1110		65	Washer	WT12D032D025
	19	Disc Holder	PNW1924		66	Connector Assy	PDE1241
	20	Cushion A	PED1001		67	Stopper Spring	PBH1131
	21	Holder Lever	PNW1925		68	Stopper	PNW2069
	22	Float Rubber	PEB1014		69	D.C. Motor Assy	PEA1246
	23	Float Rubber	PEB1132			(CARRIAGE)	
	24	Float Screw	PBA1073		70	Upper Chassis	PNB1267
	25	Release Lever	PNW1934		71	Sub Chassis	PNW2440
					72	Connector Assy	PDE1240
	26	Release Spring	PBH1106				
	27	Clamper Cam	PNW1922				
	28	Clamper Holder	PNW1921				
	29	Clamper Spring	PBH1109				
	30	Clamper	PNW1857				
				NSP	101	Motor	VXM1033
	31	Lock Lever	PNW1917	NSP	102	Eject Lever	PNB1306
	32	Lock Spring	PBH1108		103	• • • •	
	33	Stair NL	PNW2443	NSP	104	Servo mechanism Assy M	PXA1512
	34	Stair NR	PNW2444				
	35	Synchronize Lever	PNW1926	NSP	105 106	Loading Board Assy	PWZ2038
	26	Matan Anni	DEA1120		107		
	36	Motor Assy	PEA1130	NICD		Main Chanin	DNIWOOTA
		(LOADING, DISC SELECT)		NSP	108	Main Chassis	PNW2074
	37	Screw	PMZ26P040FMC	NSP	109	Select Board Assy	PWZ2533
	38	Screw	PPZ30P080FMC				
	39	Screw	BBZ30P060FMC	NSP	110	Motor Board Assy	PWZ2040
				NSP	111	Mechanism Board Assy	PWX1192
	40	Washer	WT26D047D025	NSP	112	Earth Lead Unit	PDF1074
	41	Washer	WA31D054D025	NSP	113	Clamp Magnet	PMF1014
	42	E Ring	Z39-010	NSP	114	Gear Stopper	PNB1303
	43	Screw	IPZ30P080FMC				
				NSP	115	Yoke M	PNB1312
	44	Rubber Spacer	PEB1238	NSP	116	AV Angle	PNB1405
	45	Rubber Spacer	PEB1179	NSP	117	Carriage DC Motor / 0.3W	PXM1027
	46	Silent Ring	PBK1093				
	47	Washer	WA62D130D025				
	48	Earth Spring	PBH1132				
	-						

4. BLOCK DIAGRAM



5. SCHEMATIC DIAGRAM

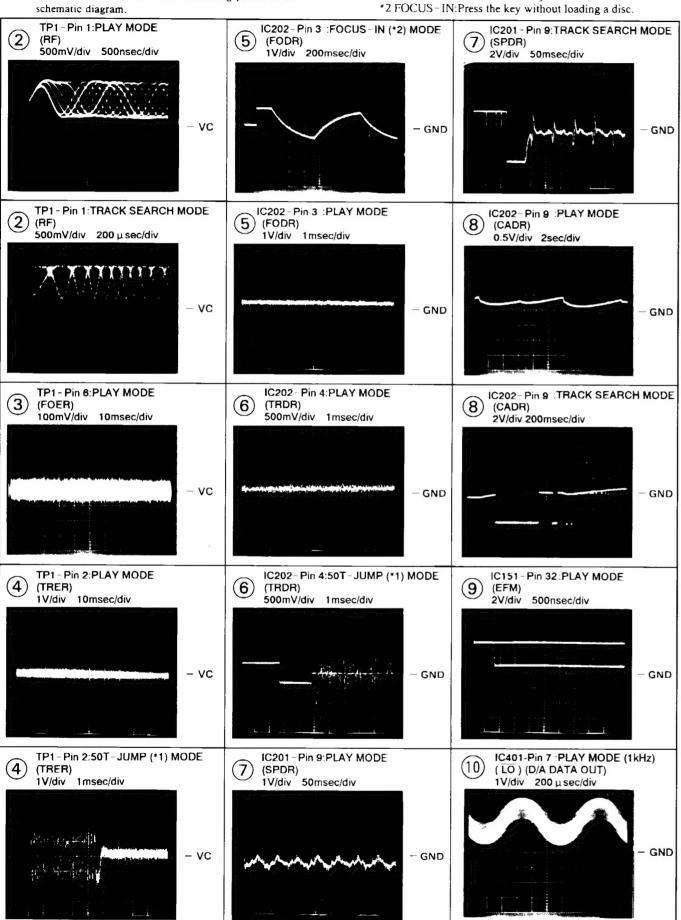
5.1 Waveforms

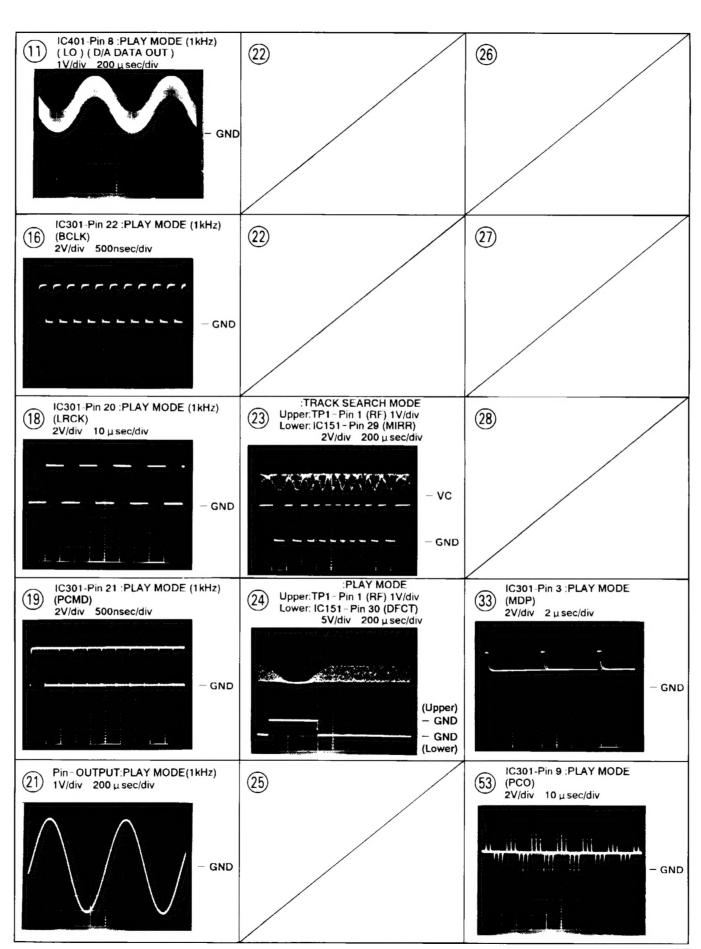
Note: The encircled numbers denote measuring points in the

*1 50T-JUMP: After switching to the pause mode, press the manual search key.

*2 FOCUS-IN: Press the key without loading a disc.

11





NOTE FOR SCHEMATIC DIAGRAMS

(Type 4A)

- 1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
- 2. Since these are basic circuits, some parts of them or the values of some components may be changed for improve-

3. RESISTORS:

Unit: $k:k\Omega$, $M:M\Omega$, or Ω unless otherwise noted.

Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise

Tolerance: (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$, (M): $\pm 20\%$ or $\pm 5\%$ unless otherwise noted.

4. CAPACITORS:

Unit: p:pF or µF unless otherwise noted. Ratings: capacitor (µF)/ voltage (V) unless otherwise noted. Rated voltage: 50V except for electrolytic capacitors.

5. COILS:

Unit: m:mH or µH unless otherwise noted.

6. VOLTAGE AND CURRENT:

☐ or - V:

DC voltage (V) in PLAY mode unless otherwise noted. ⇔ mA or ← mA:

DC current in PLAY mode unless otherwise noted. Value in () is DC current in STOP mode.

7. OTHERS:

Ø or Ø : Adjusting point.

: Measurement point.

portance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

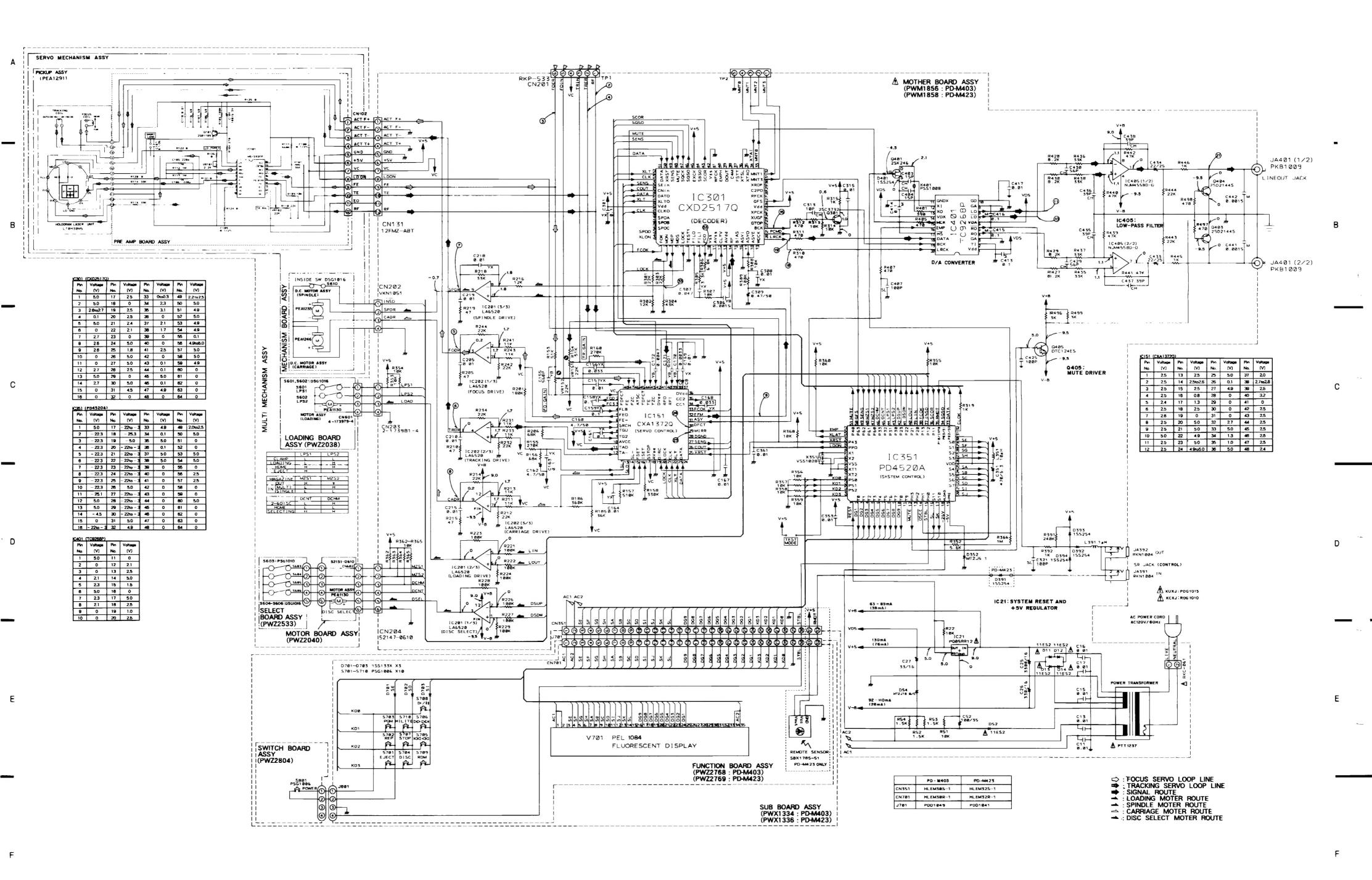
8. SCH- ON THE SCHEMATIC DIAGRAM:

• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

9. SWITCHES (Underline indicates switch position):

FUNCTION BOARD ASSY S701 : EJECT S702 : REPEAT S703 PROGRAM S704 DISC S705 : ⋈**⊲·**⊲⊲ S706 S707 : STOP S708 : ▷/[][] S709 : RANDOM S710 : HI - LITE SCAN

> SWITCH BOARD ASSY S801 : POWER



14

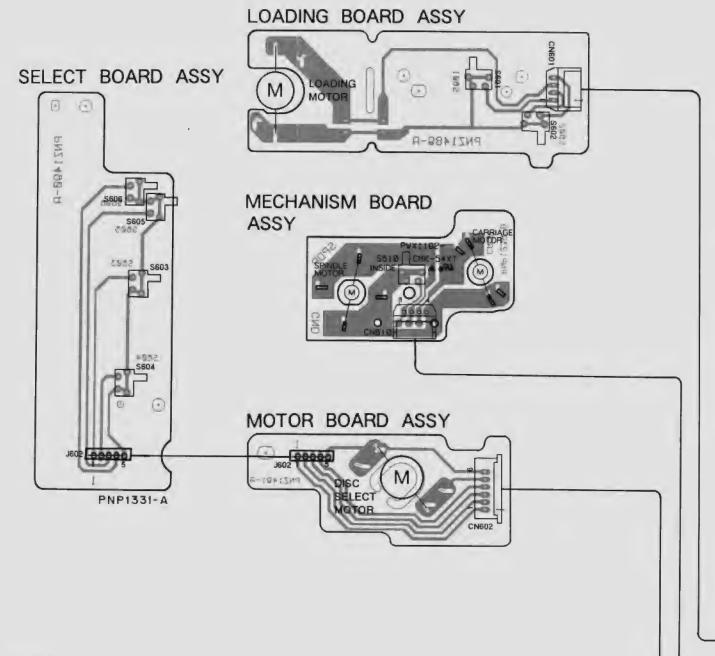
This diagram is viewed from the mounted parts side.

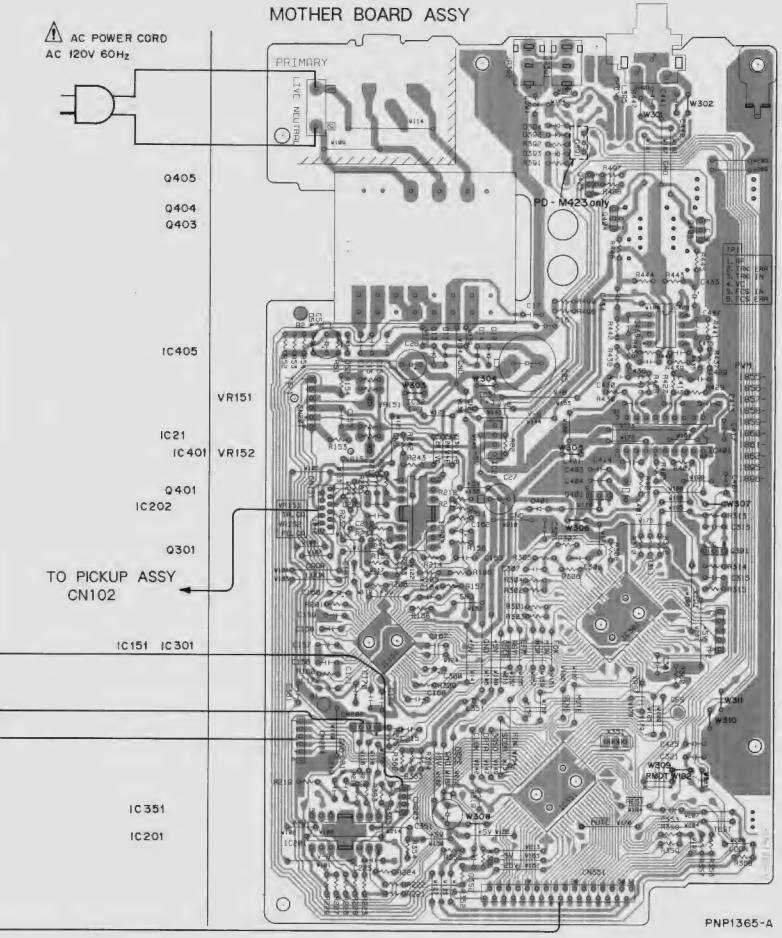
NOTE FOR PCB DIAGRAMS:

- 1. Part numbers in PCB diagrams match those in the schematic
- diagrams.

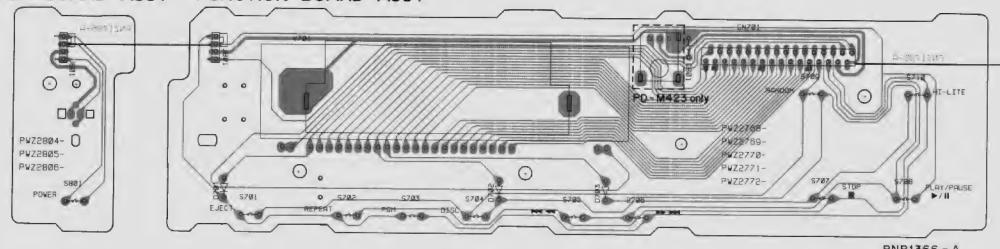
 2. A comparison between the main parts of PCB and schematic diagrams is shown below.

ulagrams is snown	201011.	
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
(O O O) B C E	B C E B C E	Transistor
● <u>○ ○ ○</u> . B ¢ E .	B C C C C C C C C C C C C C C C C C C C	Transistor with resistor
000 DGS	D G S D G S	Field effect transistor
(000 <u>%000</u>)		Resistor array
000	IN OUT	3- terminal regulator



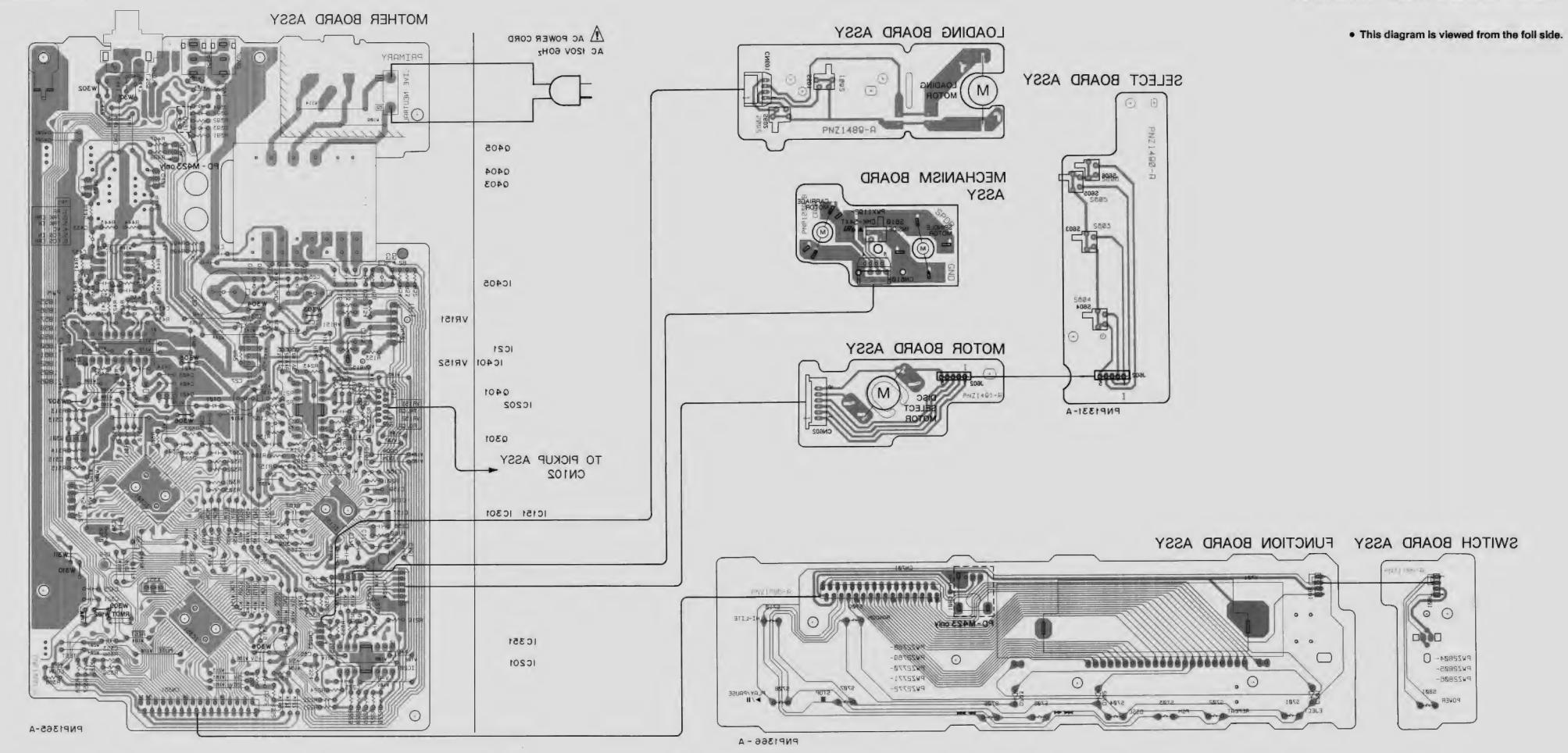


SWITCH BOARD ASSY FUNCTION BOARD ASSY



PNP1366 - A

6. PCB CONNECTION DIAGRAM



7. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "O" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

 $560 \ \Omega$ $\rightarrow 56 \times 10^1 \rightarrow 561$ RD1/8PM [5] [6]] J

 $47k \ \Omega$ $\rightarrow 47 \times 10^3 \rightarrow 473$ RD1/4PS [4] [7] [3] J

 $0.5 \ \Omega$ $\rightarrow 0R5$ RN2H [0] [R] [5] K

 $1 \ \Omega$ $\rightarrow 010$ RS1P [0] [1] [0] K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

 $5.62k \Omega \rightarrow 562 \times 10^1 \rightarrow 5621 \cdots RN1/4PC [5] [6] [2] [1] F$

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
LIST	OF AS	SEMBLIES		CAPA	CITORS		
					C11, C13	CERAMIC CAPACITOR	CKCYF103Z50
↑	MOTHER BOAL	YZZA OS	PWM1858		C15	CERAMIC CAPACITOR	CKCYF103Z50
77	mornial bon				C155	CERAMIC CAPACITOR	CKCYB561K50
NSP	MECHANISM 1	ROARD ASSV	PWX1279		C156	CERAMIC CAPACITOR	CGCYX333K25
NSP		BOARD ASSY	PWZ2038		C157	CERAMIC CAPACITOR	CGCYX103K25
NSP		DARD ASSY	PWZ2040		CIST	CLANAMIC CALACITOR	COCIATOSRES
NSP		BOARD ASSY	PWZ2533		C158, C159	CERAMIC CAPACITOR	CGCYX104K25
101	-SELECT I	XXIII XXII	1 #22333		C156, C155	CERAMIC CAPACITOR	CKCYF103Z50
NSP	SUB BOARD	LCCV	PWX1336		C160	ELECT. CAPACITOR	
NOP		N BOARD ASSY			C161		CEAS4R7M50
100			PWZ2769			CERAMIC CAPACITOR	CGCYX104K25
NSP	-2Alich	BOARD ASSY	PWZ2804		C162	ELECT. CAPACITOR	CEAS4R7M50
NSP	MECHANISM 1	BOARD ASSY	PWX1192		C163	CERAMIC CAPACITOR	CGCYX104K25
					C164	CERAMIC CAPACITOR	CGCYX103K25
					C167	CERAMIC CAPACITOR	CKCYF103Z50
					C168	CERAMIC CAPACITOR	CGCYX333K25
MOT	HER BO	DARD ASSY			C169	CERAMIC CAPACITOR	CGCYX103K25
SEMIC	ONDUCTO	ORS			C17	CERAMIC CAPACITOR	CKCYF103Z50
	IC151	SERVO IC	CXA1372Q		C170	CERAMIC CAPACITOR	CKCYB332K50
		POWER OP-AMP IC	LA6520		C171	CERAMIC CAPACITOR	CKCYB102K50
	IC21	REGULATOR, IC	PQ05RR12		C172	CERAMIC CAPACITOR	CKCYB472K50
	IC301	EFW DEMODULATION IC	CXD2517Q		C205, C210	CERAMIC CAPACITOR	CKCYF103Z50
	IC351	MICROCOMPUTER IC	PD4520A		C203, C210	CERTAIL CALACITOR	CACTF 103230
					C215	CERAMIC CAPACITOR	CKCYF103Z50
	IC401	CONVERTER IC	TC9268P		C218	CERAMIC CAPACITOR	CGCYX103K25
	IC405	OP-AMP IC	NJM4558D-D		C219	CERAMIC CAPACITOR	CKCYF103Z50
	Q301	TRANSISTOR	2SC3732		C25	ELECT. CAPACITOR	CEAS332M16
	Q401	N-FET	2SK246		C26	ELECT. CAPACITOR	CEAS331M16
	Q403, Q404	TRANSISTOR	2SD2144S		000	bebot. On action	CLASSSIMIO
	4000, 4000				C27	ELECT. CAPACITOR	CEAS330M16
	Q405	TRANSISTOR	DTC124ES		C301	CERAMIC CAPACITOR	CGCYX104K25
	D11-D14	DIODE	11ES2		C306	CERAMIC CAPACITOR	CKCYB152K50
	D352	ZENER DIODE	MTZJ5. 1B		C307	CERAMIC CAPACITOR	CGCYX473K25
	D391-D394	DIODE	1SS254		C308	CERAMIC CAPACITOR	CGCYX103K25
	D401	DIODE	1SS254		C300	CERMIC CAPACITOR	CGCIAIUSN25
					C309	ELECT. CAPACITOR	CEASR47M50
_	D52	DIODE	11ES2		C313	CERAMIC CAPACITOR	CCCCH100D50
	D54	ZENNER DIODE	MTZJ18B		C315	CERAMIC CAPACITOR	CKCYF103Z50
					C321	CERAMIC CAPACITOR	CCCSL101J50
COILS		ANTAL TARRESPOND	T 4113 OOK		C351	ELECT. CAPACITOR	CEAS471M6R3
	L351	AXIAL INDUCTOR	LAU100K				
	L391	AXIAL INDUCTOR	LAU010K		C353, C361	CERAMIC CAPACITOR	CKCYF103Z50
					C403, C404	CERAMIC CAPACITOR	CCCCH150J50
					C407	CERAMIC CAPACITOR	CCCSL101J50

Mark	No.	Description	Part No.	Mark	No.	Description	Part No
	C413-C416	AUDIO FILM CAPACITOR	CFTYA104J50	SWIT	СН	BOARD ASSY	
	C417	CERAMIC CAPACITOR	CKCYF103Z50				
				SWITC	HES		
	C425	CERAMIC CAPACITOR	CCCSL101J50		S801	SWITCH	PSG1006
	C429, C430	CERAMIC CAPACITOR	CCCCH560J50				_
	C433, C434	ELECT. CAPACITOR	CEAS220M25	MEC	HAN	IISM BOARD ASS'	Y
	C435-C438	CERAMIC CAPACITOR	CCCCH390J50				
	C441, C442	FILM CAPACITOR	PCL1030	OTHER	RS		
		(0.0015/50V)			CN610	CONNECTOR 4P	VKN1061
					S610	PUSH SWITCH	DSG1016
	C52	ELECT. CAPACITOR	CEAS101M35				
	TORS						
	VR151, VR152		PCP1030				
	OTHER RESIS	STORS	RD1/6PM□□□J				
1EF	RS						
-	CN131	CONNECTOR	12FMZ-ABT				
	CN202	CONNECTOR	VKN1051				
	CN203	CONNECTOR 4P	4-173981-4				
	CN204	6P JUMPER CONNECTOR	52147-0610				
	CN351	CONNECTOR 32P	9604S-32C				
	JA391	JACK (FOR CONTROL IN)	RKN1004				
	JA392	JACK (FOR CONTROL OUT)					
	JA401	JACK (FOR LINE OUT)	PKB1009				
	351	CERAMIC OSCILLATOR	VSS1028				
9	X401	CRYSTAL OSCILLATOR	PSS1008				
RAF	PING TE	RMINAL	RKC-061				
	ING B	OARD ASSY					
	S601, S602	PUSH SWITCH	DSG1016				
	RS	COMPONED AD	4 120070 4				
	CN601	CONNECTOR 4P	4-173979-4				
T	OR BO	ARD ASSY					
HEI	RS						
	CN602	6PJUMPER CONNECTOR	52151-0610				
.E	ECT BO	ARD ASSY					
ITC	HES						
	S603	DETECTOR SWITCH	PSG1010				
	S604-S606	PUSH SWITCH	DSG1016				
	CTION I	BOARD ASSY					
IC	ONDUCTO	ORS					
	D701-D703	DIODE	1SS133X				
_	HES						
	S701-S710	SWITCH	PSG1006				
	RS						
	V701	FL INDICATOR TUBE	PEL1084				
	CN701	CONNECTOR 32P	9604S-32F				
	REMOTE SENS	SOR	SBX1785				

8. ADJUSTMENTS

8.1. Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

Adjustment items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1-4, the pickup block may be defective.

Step	item	Test Point	Adjustment Location
1	Focus offset verification	TP1, Pin 6 (FCS. ERR)	None
2	Tracking error balance verification	TP1, Pin 2(TRK. ERR)	None
3	Pickup radial/tangential direction tilt adjustment	TP1, Pin 1 (RF)	Radial tilt adjustment screw, Tangential tilt adjustment screw
4	RF level verification	TP1, Pin 1 (RF)	None
5	Focus servo loop gain adjustment	TP1, Pin 5 (FCS. IN) TP1, Pin 6 (FCS. ERR)	VR152(FCS. GAN)
6	Tracking servo loop gain adjustment	TP1, Pin 3(TRK. IN) TP1, Pin 2(TRK. ERR)	VR151 (TRK. GAN)

Abbreviation table

FCS. ERR :Focus Error
TRK. ERR :Tracking Error
FCS GAN :Focus Gain
TRK GAN :Tracking Gain
FCS. IN :Focus In
TRK. IN :Tracking In

Measuring Instruments and Tools

- 1. Dual trace oscilloscope (10:1 probe)
- 2. Low-frequency oscillator
- 3. Test disc (YEDS-7)
- 4. Low pass filter ($39k\Omega + 0.001 \mu F$)
- 5. Resistor (100 k Ω)
- 6. Standard tools

Test Point and Adjustment Variable Resistor Positions

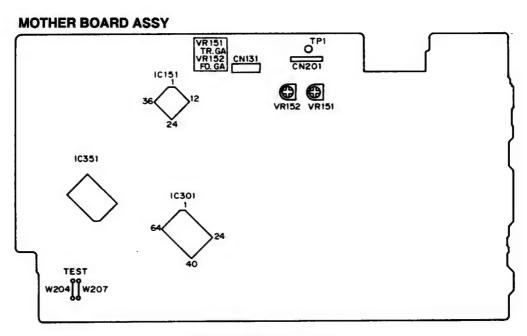


Figure 1. Adjustment Locations

Notes

- 1. Use a 10:1 probe for the oscilloscope.
- 2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

Test Mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

[Setting these models to test mode]

How to set this model into test mode.

- 1. Unplug the power cord from the AC socket.
- 2. Short the test mode jumper wires. (See Figure 1.)
- 3. Plug the power cord back into the AC socket.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1 - 3.

[Release from test mode]

Here is the procedure for releasing the test mode:

- 1. Press the STOP key and stop all operations.
- 2. Unplug the power cord from the AC socket.

[Operations of the keys in test mode]

Code	Key Name	Function in Test Mode	Explanation
	PGM (PROGRAM)	Focus servo close	The laser diode is lit up and the focus actuator is lifted up, then lowered slowly and the focus servo is closed at the point where the objective lens is focused on the disc. With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo. If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled up, then the actuator is lowered and raised three times and returned to its original position.
D/00	PLAY/PAUSE	Spindle servo ON	Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop. Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed. If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred.
		Tracking servo close/open	Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal. If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem. This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted.

Code	Key Name	Function in Test Mode	Explanation
₩.₩	TRACK / MANUAL SEARCH REV	Carriage reverse (inwards)	Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode be careful with this operation.
D>.	TRACK / MANUAL SEARCH FWD	Carriage forward (outwards)	Moves the pickup position toward the outer diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode be careful with this operation.
	STOP	Stop	Initializes and the disc rotation stops. The pickup and disc remain where they are when this key is pressed.
Δ	EJECT	CD magazine eject	Stores Disc 1 in the CD magazine, then ejects the CD magazine. However, even though the CD magazine is ejected, the pickup does not return to the park position Even if the CD magazine is mounted again, the pickup remains where it is.

Note: When inserting the magazine, disc I of the magazine is loaded automatically.

[How to play back a disc in test mode]

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.

Here is the key operation sequence for playing back a disc in test mode.

PGM(PROGRAM)	Lights up the laser diode and closes the focus servo.
Û	
D/00	Starts the spindle motor and closes the spindle servo.
↓	Olever the track's manager
D/00	Closes the tracking servo.

Wait at least 2-3 seconds between each of these operations.

1. Focus Offset Verification

● Objective	Verify the	Verify the DC offset for the focus error amp.		
 Symptom when out of adjustment 	The model	The model does not focus in and the RF signal is dirty.		
Measurement instru- ment connections	Connect the oscilloscope to TP1, Pin 6 (FCS. ERR)		Player state	Test mode, stopped (just the Power switch on)
	[Settings]	5 mV/division 10 ms/division	● Adjustment location	None
		DC mode	● Disc	None needed

[Procedure]

Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is 0 ± 50 mV.

Note: If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 - 4, the pickup block may be defective.

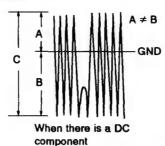
2. Tracking Error Balance Verification

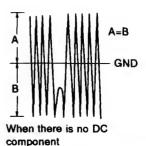
Objective	To verify the	To verify that there is no variation in the sensitivity of the tracking photo diode.		
Symptom when out of adjustment	Play does n	Play does not start or track search is impossible.		
Measurement instru- ment connections	TP1, Pin 2	e oscilloscope to (TRK. ERR). This may be via a low	Player state Adjustment location	Test mode, focus and spindle servos closed and tracking servo open
	[Settings]	50 mV/division 5 ms/division DC mode	● Disc	YEDS-7

[Procedure]

- 1. Move the pickup to midway across the disc (R=35 mm) with the TRACK/MANUAL SEARCH FWD ▷▷ ▷▷ or REV ▷▷ ▷▷ key.
- 2. Press the PGM (PROGRAM) key, then the PLAY/PAUSE >/ [][] key in that order to close the focus servo then the spindle servo.
- 3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
- 4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.

When
$$A \ge B$$
, $\frac{A-B}{C} \times \frac{1}{2} \le 0.1$ When $A < B$, $\frac{B-A}{C} \times \frac{1}{2} \le 0.1$





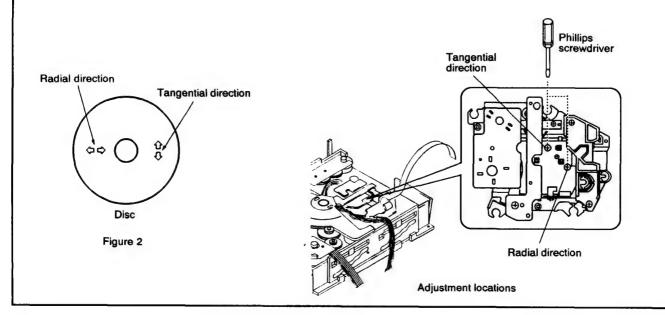
3. Pickup Radial/Tangential Tilt Adjustment

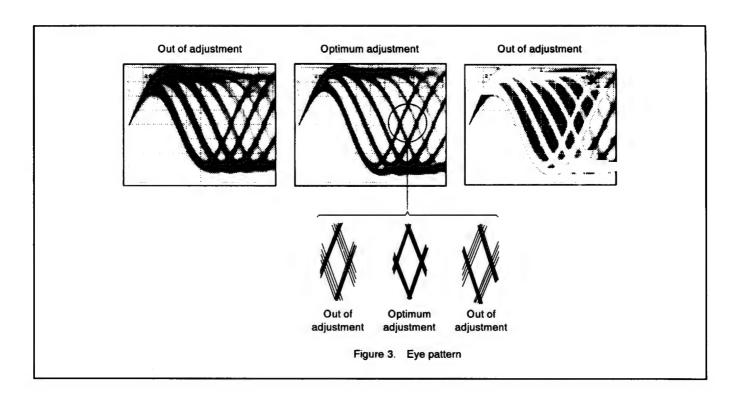
● Objective	down into	To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals.		
Symptom when out of adjustment	Sound brok	(en;some discs can	be played but not others.	
Measurement instru- ment connections	Connect the	e oscilloscope to (RF).	● Player state	Test mode, play
	[Settings]	20 mV/division 200 ns/division AC mode	Adjustment locationDisc	Pickup radial tilt adjustment screw and tangential tilt adjustment screw YEDS-7

[Procedure]

- 1. Press the TRACK/MANUAL SEARCH FWD ▷▷ ▷▷ or REV ▷▷ ⟨□⟨ key to move the pickup to halfway across the disc (R=35mm).
 - Press the PGM (PROGRAM) key, the PLAY/PAUSE > / | | key twice in that order to close the respective servos and put the player into play mode.
- 2. First, adjust the radial tilt adjustment screw with a Phillips screwdriver so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
- 3. Next, adjust the tangential tilt adjustment screw with a Phillips screwdriver so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
- 4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
- 5. When the adjustment is completed, lock the radial and tangential adjustment screw.

 Note: Radial and tangential mean the directions relative to the disc shown in Figure 2.





4. RF Level Verification

Objective	To verify t	To verify the playback RF signal amplitude		
Symptom when out of adjustment	No play or	No play or no search		
Measurement instru- ment connections	Connect th	Test mode, play		
	[Settings]	50 mV/division 10 ms/division	● Adjustment location	None
		AC mode	● Disc	YEDS-7

[Procedure]

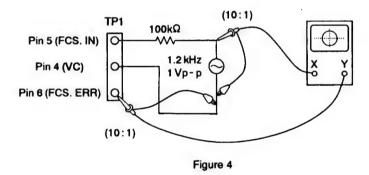
- 1. Move the pickup to midway across the disc (R=35 mm) with the TRACK/MANUAL SEARCH FWD ▷▷ ▷▷ or REV ▷▷ ◇□ key, then press the PGM (PROGRAM) key, the PLAY/PAUSE ▷ / □□ key twice in that order to close the respective servos and put the player into play mode.
- 2. Verify the RF signal amplitude is $1.2 \text{ Vp-p} \pm 0.2 \text{ V}$.

5. Focus Servo Loop Gain Adjustment

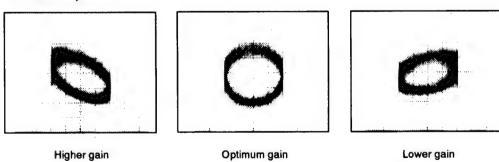
Objective	To optimize the focus serv	To optimize the focus servo loop gain.				
Symptom when out of adjustment	Playback does not start or focus actuator noisy.					
Measurement instru- ment connections	See figure 4. [Settings]	Player state	Test mode, play			
	CH1 CH2 20 mV/division 5 mV/div	To respect the recognition	VR152 (FCS. GAN)			
	X-Y mode	● Disc	YEDS-7			

[Procedure]

- 1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
- 2. Press the TRACK/MANUAL SEARCH FWD >> >> or REV |
 A key to move the pickup to halfway across the disc (R=35 mm), then press the PGM(PROGRAM) key, the PLAY/PAUSE |
 / [] key twice in that order to close the corresponding servos and put the player into play mode.
- 3. Adjust VR152 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.



Focus Gain Adjustment

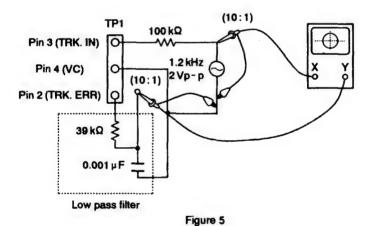


6. Tracking Servo Loop Gain Adjustment

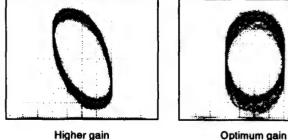
● Objective	To optimize the tracking servo loop gain.			
Symptom when out of adjustment	Playback does not start, during searches the actuator is noisy, or tracks are skipped.			
Measurement instru- ment connections	See Figure 5.	Player state	Test mode, play	
	[Settings] CH1 CH2	Adjustment location	VR151 (TRK. GAN)	
	50 mV/division 20 mV/division X-Y mode	● Disc	YEDS-7	

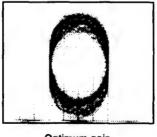
[Procedure]

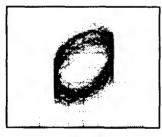
- 1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
- 2. Press the TRACK/MANUAL SEARCH FWD ▷▷ ▷▷ or REV □□□ ≪ key to move the pickup to halfway across the disc (R=35 mm), then press the PGM (PROGRAM) key, the PLAY/PAUSE >/ []] key twice in that order to close the corresponding servos and put the player into play mode.
- 3. Adjust VR151 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.



Tracking Gain Adjustment



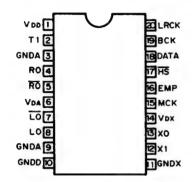




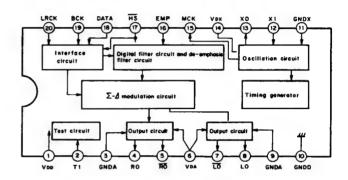
Lower gain

9. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.
- TC9268P (IC401) D/A Convertor IC
- Pin Arrangement (Top view)



Block Diagram



Pin Functions

Pin No.	Symbol	1/0	Function
1	VDD	-	Power supply pin of digital section.
2	T1	1	Test pin. Normally "L".
3	GNDA	-	Ground pin of analog section for R channel.
4	RO	0	R channel data normal output pin.
5	RO	0	R channel data inversion output pin.
6	VDA	-	Power supply pin of analog section.
7	LO	0	L channel data inversion output pin.
8	LO	0	L channel data normal output pin.
9	GNDA	-	Ground pin of analog section for L channel.
10	GNDD	-	Ground pin of digital section.
11	GNDX	-	Ground pin of crystal oscillation section.
12	XI	1	Connected to crystal oscillator.
13	хо	0	Generates clock required for the system.
14	VDX	-	Power supply pin of crystal oscillation section.
15	MCK	0	System clock output pin.
16	EMP	ı	De-emphasis filter control pin. De-emphasis filter on at "H". De-emphasis filter off at "L".
17	HS	ı	Normal speed/ ×2 speed selection pin. "H": Normal speed, "L": ×2 speed.
18	DATA	1	Data input pin.
19	ВСК	ı	Bit clock input pin.
20	LRCK	1	LR clock input pin.

PD4520A (IC351) System Control

Pin Functions

Pin No.	Symbol	Name	Function	1/0	Reset	Potential	
1	RESET	REST	CPU reset ("L" : Reset)	-	_	_	
2	ТО	G1					
3	T1	G2					
4	T2	G3					
5	ТЗ	G4					Positiva de
6	T4	G5	DIGIT output for FL driving.	0	-26V		Built-in pull-down resistor
7	T5	G6					
8	T6	G7					
9	Т7	G8					
10	ТВ	G9		·			
11	Т9	Not used	NC (open)	0	_	_	
12	РНЗ	MUTE	Muting output. ("L" : Mute, "H" OFF)	0	-	L	
13	PH2	SYC3	Sync output.	0	_	L	
14	PH1	OSCE	OSCE output. ("L" : Oscillation, "H" : Stop)	0	_	L	
15	PHO	STBL	Standby LED output. ("L" : OFF, "H" : Light)	0	-	L	
16	S11	SEGI	SECMENT output for El diving	o	-26V	-26V	
17	S10	SEG k	SEGMENT output for FL driving.	Ů	-264	-26V	
18	Vload		-26V	_	_	_	
19	Vpre		-5V	-	-	-	
20	S9	SEG j					
21	S8	SEG i					
22	S7	SEG d	2504545				Built-in
23	S6	SEG c	SEGMENT output for FL driving.	0	-26V	-26V	pull-dow resistor
24	S5	SEG b	1				
25	S4	SEGa					
26	VDD	VDD	+5V	-	-		
27	S3	SEG h					
28	S2	SEG g	0500505			6714	
29	S1	SEG f	SEGMENT output for FL driving.	0	-26V	-26V	Γ'
30	SO	SEG e	1]
31	P00	SYCI	Sync input.	1	-	-	1
32	SCK	СГОК	Serial clock.	0	-	н	1
							J

(Disc Selector UP/DOWN)

		DSDW	DSUP
Selector	UP	L	Н
	DOWN	H	L
	Stop	L	L

(Loading Selector)

		LOUT	LIN
Tray	IN OUT Stop	L	Н
	OUT	ļ ļ	Ļ
	Stop	L	L.

PD-M423, PD-M403

Pin No.	Symbol	Name	Function	1/0	Reset	Potential
33	So	DATA	LSI control data serial output.	0	-	Н
34	S1	sqso	Subcode Q data serial input.	ı	-	_
35	INT 0	RMDT	Remote control data input.		_	-
36	INT 1	SCOR	Subcode sync S0+S1 input.	1	_	-
37	P12	INSD	Slider inside SW input. ("L": INSIDE)	ı	_	-
38	P13	FOCK	Focus OK input ("H" : OK, "L" : NG)	1	-	-
39	P20	LIN	Distance WOLLT (Consequence)	0	_	L
40	P21	LOUT	Disk tray IN/OUT. (See page 35)	0	-	L
41	P22	DSDW	District Annual Indiana (Co.	0	_	L
42	P23	DSUP	Disk selector UP/DOWN. (See page 35)	0	-	L
43	P30	LPS2		ı	_	_
44	P31	LPS1	Load position SW input. (See the following)	ı	_	_
45	P32	DCNT	DISC selector count pulse. (See the following)	ı	-	_
46	P33	DCHM	DISC selector home. (See the following)	ı	-	_
47	P80	MZS2		ı	~	_
48	P61	MZS1	Magazine discrimination SW input. (See the following)	1	-	-
49	S62	SENS	LSI operation condition multi mode input.	ı	-	_
50	S63	GFS	Frame sync lock input. ("H" : OK, "L" : NG)	ı	-	-
51	P40	MUTE	Muting output. ("H": Mute, "L": OFF)	0	-	н
52	P41	DEMP	De-emphasis output. ("H" : ON)	0	-	L
53	P42	XLAT	LSI control data latch pulse.	0	-	н
54	P43	XRST	LSI reset. ("L": RESET, "H": Release)	0	-	L
55	PPO	LDON	Laser diode output. ("H": OFF, "L": ON)	0	-	Н
56	X1	X1				
57	X2	X2	Main system clock oscillation. (4.194304 MHz)	-	-	-
58	vss	vss	GND	_	-	
59	XT1	Not used	GND (Vss)	-	_	_
60	XT2	Not used	NC (open)		_	_
61	P50	KD 0/TEST	Key scan input and TEST mode request input.	1	_	_
62	P51	KD1	The second secon			
63	P52	KD2	Key scan input.		_	_
64	P53	KD3		'		

(Magazine Discrimination)

	MZS 1	MZS 2
Magazine OUT	Н	*
IN Multi	l ï	Н
IN Single	L	L

(DISC Select)

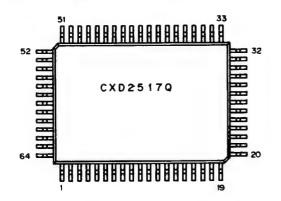
	DCNT	DCHM
2 to 6 DISCS	L	H
HOME	L	L
During selecting	H	*

(Load Position SW)

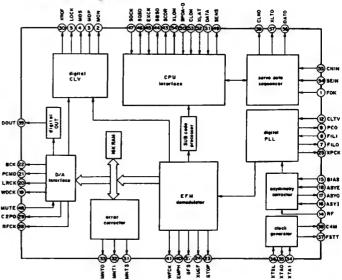
	LPS	LPS
CLAMP	L	L
LOADING	L	H
HOME	1 !!	l H
EJECT	l H	L

■ CXD2517Q (IC301) EFM Demodulator IC

● Pin Arrangement (Top view)



Block Diagram



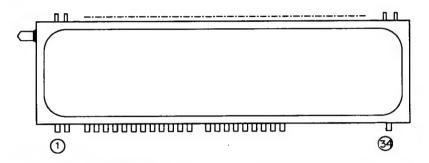
Pin Functions

● Pin Functions				
Pin No.	Symbol	1/0		Function
1	FOK	1	_	Focus OK input pin. Used for SENS output and servo auto sequence.
2	MON	0	1, 0	ON/OFF control output for spindle motor.
3	MDP	0	1, Z, 0	Spindle motor servo control.
4	MDS	0	1, Z, 0	Spindle motor servo control.
5	LOCK	0	1, 0	High output GFS is sampled at 460 Hz and that is High; Low output when GFS is sampled 8 times and that is Low.
6	TEST	1	_	Test pin, normally GND.
7	FILO	0	Analog	Filter output for master PLL .(slave=digital PLL)
8	FILI	ı	-	Master PLL filter input.
9	PCO	0	1, Z, 0	Master PLL charge pump output.
10	Vss	-	-	GND
11	AVss	-	_	Analog GND
12	CLTV	1	_	Master VCO control voltage input.
13	AVDD	-	-	Analog power supply. (+5V)
14	RF	ı	-	EFM signal input.
15	BIAS	ı	-	Asymmetry circuit constant current input.
16	ASYI	1	-	Asymmetry comparator voltage input.
17	ASYO	0	1, 0	EFM full-swing output. (Low=Vss, High=Vpp)
18	ASYE	ı	-	"L": Asymmetry circuit OFF, "H": Asymmetry circuit ON.
19	WDCK	0	1, 0	D/A interface. Word clock f=2 Fs.
20	LRCK	0	1, 0	D/A interface. LR clock F=FS.
21	PCMD	0	1, 0	D/A interface. Serial data . (2's COMP, MSB fast)
22	вск	0	1, 0	D/A interface. Bit clock.
23	GTOP	0	1, 0	GTOP output.
24	XUGF	0	1, 0	XUGF output.
25	XPCK	0	1, 0	XPLCK output.

Pin No.	Symbol	Ι	I/O	Function
26	VDD	-	_	Power supply . (+5V)
27	GFS	0	1, 0	GFS output.
28	RFCK	0	1, 0	RFCK output.
29	C2PO	0	1, 0	C2PO output.
30	XROF	0	1, 0	XRAOF output.
31	митз	0	1, 0	MNT3 output.
32	MNT1	0	1, 0	MNT1 output.
33	мито	0	1, 0	MNT0 output.
34	XTAI	1	-	Crystal oscillator circuit input. 16.9344 MHz or 33.8688 MHz input.
35	XTAO	0	1, 0	16.9344 MHz crystal oscillation circuit output.
36	XTSL	1	-	Crystal selection input. Low for 18.9344 MHz crystal; High for 33.8688 MHz crystal.
37	FSTT	0	1, 0	2/3 frequency divider input of Pins 34 and 35.
38	C4M	0	1, 0	4.2336 MHz output.
39	DOUT	0	1, 0	Digital Out output.
40	EMPH	0	1, 0	Playback disc emphasis mode output. (Low for no emphasis applied; High for emphasis applied)
41	WFCK	0	1, 0	WFCK output.
42	Vss	-	-	GND
43	SCOR	0	1, 0	Subcode sync output. (High for subcode sync S0 or S1 detected)
44	SBSO	0	1, 0	Sub P to W serial output.
45	EXCK	ı	_	SBSO readout clock input.
46	sqso	0	1, 0	Sub Q 80-bit serial output.
47	SQCK	1	-	SQSO readout clock input.
48	MUTE	1	-	"H": Mute, "L": Release.
49	SENS	0	1, 0	SENS output .(Output to CPU)
50	XRST	ı	_	System reset .(Low for reset)
51	DATA	1	-	Serial data input from CPU.
52	XLAT	ı	-	Latch input from CPU. Latches serial data at falling edge.
53	CLOK	1	-	Serial data transfer clock input from CPU.
54	SEIN	1	-	Sense input from SSP.
55	CNIN	1	_	Track jump number count signal input.
56	DATO	0	1, 0	Serial data output to SSP.
57	XLTO	0	1, 0	Serial data latch output to SSP. Latches at falling edge.
58	VDD	-	-	Power supply . (+5V)
59	CLKO	0	1, 0	Serial data transfer clock output to SSP.
60	SPOA	1	_	Microprocessor extension interface. (input A)
61	SPOB	ı	-	Microprocessor extension interface. (input B)
62	SPOC	1	-	Microprocessor extension interface. (input C)
63	SPOD	1	_	Microprocessor extension interface. (input D)
64	XLON	0	1, 0	Microprocessor extension interface. (output)

10. FLINFORMATION

■ PEL1084 (V701)

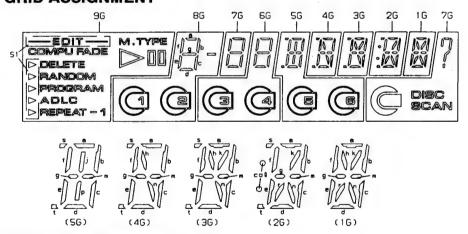


PIN CONNECTION

PIN NO.	23456789012345678901234	2 2 2 2 3 3 3 3 3 5 6 7 8 9 0 1 2 3 4
CONNECTION	NPPPPPPPPP1111N98765432 1P123456789012XGGGGGGGGG	1 NNNNNNNF GXXXXXXXXXXX

NOTE 1) F1,F2 --- Filament 4) 1G~9G --- Grid 2) NP ----- No pin 3) NX ----- No extend pin

GRID ASSIGNMENT



ANODE CONNECTION

	9G	8G	7G	ee	5G	46	3G	2G	16
PI	RANDOM	е	е	е	е	е	е	е	е
P2	FADE	f	f	f	f	f	f	f	f
Р3	COMPU	g	g	g	g,m	g	g,m	g,m	9
P4	00	0	?	-	s,t	m	s, t	s, t	m
P5	M.TYPE	a	a	۵	a	a	a	a	a
P6	SI	b	b	ь	ь	ь	ь	ь	ь

	96	86	7G	ec	5G	4G	3G	2G	1G
P7	DELETE	С	С	С	С	С	С	С	С
P8	PROGRAM	d	d	đ	d	d	d	d	đ
P9	Δ	-	DISC	-	j,p	h	h	col	Ţ
P10	ADLC	-	SCAN	-	-	s	k	k	k
P11	-1	(\bigcirc	@	@	n	n	n	n
P12	REPEAT	@		@	(3	t	-	r	r

11. FOR PD-M423/KCXJ, PD-M403/KUXJ AND KCXJ

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " ©" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

PD-M423/KCXJ, PD-M403/KUXJ, KCXJ and PD-M423/KUXJ have the same construction except for the following:

Mark	Mark Symbol and Description	PD-M423/ KUXJ	PD-M423/ KCXJ	PD-M403/ KUXJ	PD-M403/ KCXJ	Remarks
Δ	Mother Board Assy	PWM1858	PWM1858	PWM1856	PWM1856	
NSP	Sub Board Assy	PWX1336	PWX1336	PWX1334	PWX1334	
	Function Board Assy	PWZ2769	PWZ2769	PWZ2768	PWZ2768	
Δ	Power Cord with Plug	PDG1015	RDG1010	PDG1015	RDG1010	
$\stackrel{lack}{\Delta}$	Strain Relief	CM - 22C	CM - 22	CM - 22C	CM - 22	
	32P F.F.C/30V (J701)	PDD1041	PDD1041	Not Used	Not Used	
	30P F.F.C/30V (J701)	Not Used	Not Used	PDD1049	PDD1049	
	Display Window	PAM1635	PAM1635	PAM1634	PAM1634	
	Function Panel	PNW2387	PNW2387	PNW2389	PNW2389	
NSP	Rear Base	PNA2068	PNA2069	PNA2071	PNA2072	
	65 Label	ORW1069	Not Used	ORW1069	Not Used	
	Remote Control Unit	PWW1089	PWW1089	Not Used	Not Used	
	Battery Cover	PZN1010	PZN1010	Not Used	Not Used	
NSP	Battery (R03, AAA)	VEM - 022	VEM - 022	Not Used	Not Used	
	Operating Instructions (English)	PRB1205	Not Used	PRB1205	Not Used	
	Operating Instructions	Not Used	PRE1191	Not Used	PRE1191	
	(English/French)					
	Packing Case	PHG1999	PHG2000	PHG2002	PHG2003	

MOTHER BOARD ASSY

PWM1856 and PWM1858 have the same construction except for the following:

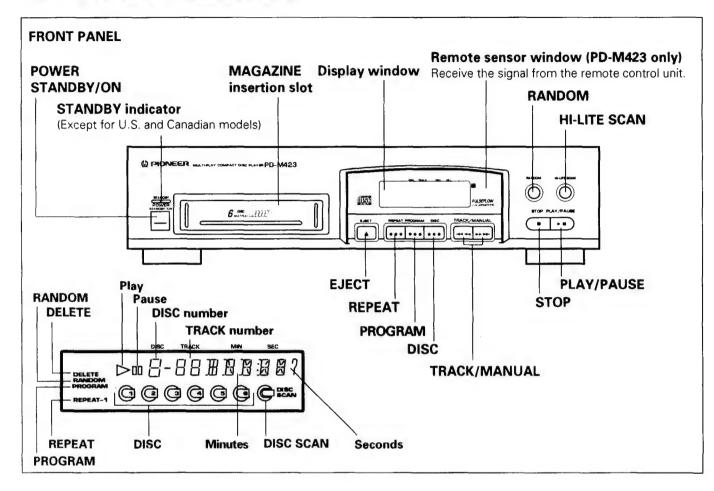
		Part		
Mark	Symbol and Description	PWM1858	PWM1856	Remarks
	D391	1SS254	Not Used	
	CN351 (Connector 32P)	9604S - 32C	Not Used	
	CN351 (Connector 30P)	Not Used	9604S - 30C	

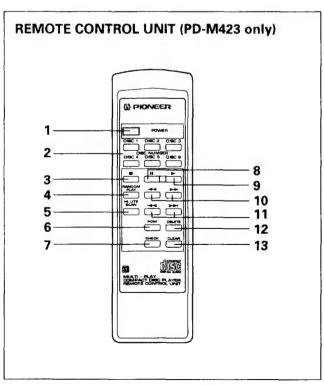
FUNCTION BOARD ASSY

PWZ2768 and PWZ2769 have the same construction except for the following:

	Part		
Symbol and Description	PWZ2769	PWZ2768	Remarks
Remote Sensor	SBX1785 - 51	Not Used	
CN701 (Connector 32P)	9607S - 32F	Not Used	
CN701 (Connector 30P)	Not Used	9607S - 30F	
	CN701 (Connector 32P)	Symbol and Description PWZ2769	PWZ2769 PWZ2768 Remote Sensor SBX1785 - 51 Not Used CN701 (Connector 32P) 9607S - 32F Not Used

12. PANEL FACILITIES





Remote control buttons with the same names or marks as buttons on the front panel of the player control the same operations as the corresponding front panel buttons.

- 1 POWER button
- 2 DISC NUMBER buttons (DISC 1-DISC 6)
- 3 STOP button (■)
- **4 RANDOM PLAY button**
- 5 HI-LITE SCAN button
- 6 PGM (program) button
- 7 CHECK button
- 8 PAUSE button
- 9 PLAY button (►)
- 10 MANUAL search buttons (◄◄', ▶▶)
- 11 TRACK search buttons (I◄◄, ▶►I)
- 12 DELETE button
- 13 CLEAR button

13. SPECIFICATIONS

General

Type	Compact disc digital audio system
Power requirements	
	AC 120 V, 60 Hz
U.K. and Australian	models AC 220-240 V, 50/60Hz
Power consumption	
U.S.model	10 W
U.K. and Australian	models 12 W
Operating temperatu	re+5°C-+35°C
	(+41°F- +95°F)
Weight (without pack	(age)
External dimensions	420(W) x 294 (D) x 105 (H) mm
	16-9/16 (W) x 11-9/16 (D) x 4-1/8 (H) in

Audio section

, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Frequency response	2 Hz – 20 kHz
S/N ratio	98dB or more (EIAJ)
Dynamic range	95dB or more (EIAJ)
Harmonic distortion	0.005% or less (EIAJ)
Output voltage	2.0 V
Wow and flutter	Limit of measurement
	(0.001% W.PEAK) or less (EIAJ)
Channels	2-channel (stereo)

Output terminal

Audio line output Control input/output jacks (Except for PD-M423 of Australian model.)

Accessories

Remote control unit (PD-M423 only)	1
Size AAA/R03 dry batteries (PD-M423 only)	
Six-compact-disc magazine	1
• Control cable (Except for PD-M423 of Australian model)	1
Output cable	1
Operating instructions	1

Specifications and design subject to possible modification without notice, due to improvements.

The Magazine Type Multi-Play CD Players with (2002) mark and the Magazines with the same mark are compatible for 5 inch (12 cm) discs.



Service Manual

ORDER NO. RRV1090

MULTI-PLAY COMPACT DISC PLAYER

PD-M423 PD-M403

Refer to the service manual RRV1062 for PD-M423/KUXJ.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

*	Model		Barrier Barrier	The voltage can be converted by the following	
Type	PD-M423	PD-M403	Power Requirement	method.	
WPW	0	_	AC220 - 240V		
RD	-	0	AC110 - 127V/220 - 240V	With the voltage selector	
RDXJ	-	0	AC110 - 127V/220 - 240V	With the voltage selector	
WL	-	0	AC220 - 240V		

1. SAFETY INFORMATION

- (FOR EUROPEAN MODEL ONLY) -

AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

- ADVERSEL: -

USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

- VARNING! -

OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.



LASER Kuva 1 Lasersateilyn varoitusmerkki

WARNING! -

DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.



LASER
Picture 1
Warning sign for laser radiation

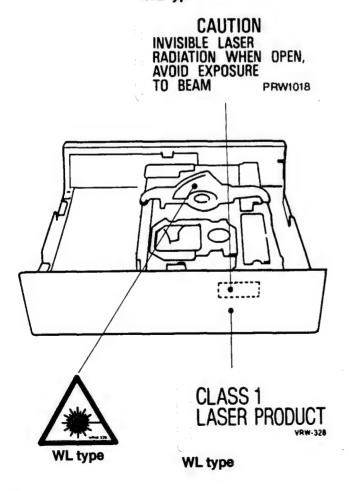
- IMPORTANT -

THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

------ LASER DIODE CHARACTERISTICS -MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK (MULTI MAGAZINE type)

WL type



Additional Laser Caution

1. Laser Interlock Mechanism

The ON/OFF (ON: low level, OFF: high level) status of S601 (LPS1) and S602 (LPS2) switches for detecting the loading state is detected by the system microprocessor, and the design prevents laser diode oscillation except when both switches S601 and S602 are ON (low level or clamped state).

Thus, interlock will no longer function if switches S601 (LPS1) and S602 (LPS2) are deliberately shorted (low level). The interlock also does not function in the test mode *.

Laser diode oscillation will continue, if pin 1 of M51593FP (IC101) on the PRE AMP BOARD ASSY mounted on the pickup assembly is connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

- When the cover is opened with the servo mechanism block removed and turned over, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.
- * Refer to page 26 on the service manual RRV1062.

FUNCTION BOAND ASSY SWITCH BOAND ASSY 5703 : POWER 5703 : PROCRAM 5709 : TOP 9. SWITCHES (Underline indicates switch position): 8. SCH—C ON THE SCHEMATIC DIAGRAM:
• SCH—C indicates the drawing number of the schematic diagram.)
gram. (SCH stands for schematic diagram.) DC current in PLAY mode unless otherwise nated. Value in () is DC current in STOP mode. 5. COILS: m:mH or µH unless otherwise noted. I. CAPACITORS:
Unit: p:pF or µF unless otherwise noted.
Ratings: capacitor (µF) voltage (V) unless otherwise noted.
Reted voltage: 50V except for electrolytic capacitors. Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% un-. RESISTORS: Unit* E.L.Q., M.M.M., or Q' unless otherwise noted. Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted. Since these are basic circults, some parts of them or the values of some components may be changed for improve-ment.

PD-M423, PD-M403

"TSIJ STRA9

1. When ordering service parts, be sure to refer to "PCB "PARTS LIST of EXPLODED VIEWS" of "PCB

NOTE FOR SCHEMATIC DIAGRAMS

2. CONTRAST OF MISCELLANEOUS PARTS

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "O" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

CONTRAST OF PD-M423/WPW, PD-M403/RD, RDXJ, WL and PD-M423/KUXJ

PD-M423/WPW, PD-M403/RD, RDXJ, WL and PD-M423/KUXJ have the same construction except for the following:

Mark	Symbol & Description	Part No.					
		PD-M423/ KUXJ	PD-M423/ WPW	PD-M403/ RD	PD-M403/ RDXJ	PD-M403/ WL	Remarks
Δ	Mother Board Assy	PWM1858	PWM1860	PWM1857	PWM1857	PWM1859	
NSP	Sub Board Assy	PWX1336	PWX1337	PWX1335	PWX1335	PWX1335	
	Function Board Assy	PWZ2769	PWZ2769	PWZ2768	PWZ2768	PWZ2768	
NSP	Switch Board Assy	PWZ2804	PWZ2805	PWZ2805	PWZ2805	PWZ2805	
Δ	Power Cord with Plug	PDG1015	RDG1022	PDG1056	PDG1058	PDG1003	

MOTHER BOARD ASSY

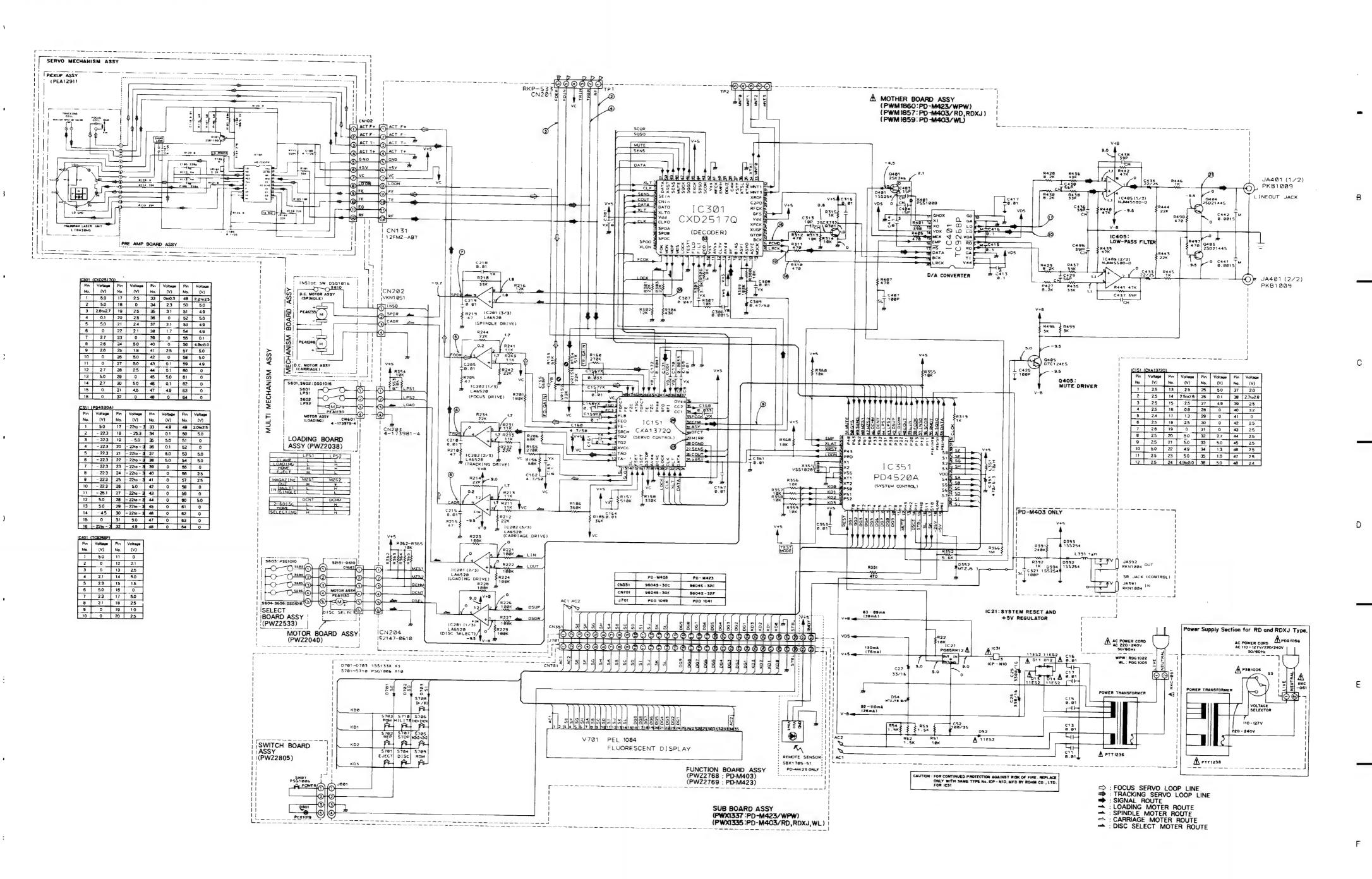
PWM1860, PWM1857, PWM1859 and PWM1858 have the same construction except for the following:

Mark	Symbol & Description	PWM1858	PWM1860	PWM1857	PWM1859	Remarks
	IC31	Jumper	ICP - N10	ICP - N10	ICP - N10	*2
	D391	1SS254	Not Used	Not Used	Not Used	
	D392 - D394	1SS254	Not Used	1SS254	1SS254	
	L391	LAU010K	Not Used	LAU010K	LAU010K	
	C321	CCCSL101J50	Not Used	CCCSL101J50	CCCSL101J50	
	R351	Not Used	RD1/6PM471J	RD1/6PM471J	RD1/6PM471J	*2
	R391	RD1/8PM244J	Not Used	RD1/6PM244J	RD1/6PM244J	_
	R392	RD1/8PM102J	Not Used	RD1/6PM102J	RD1/6PM102J	
	CN351 (Connector 32P)	9604S - 32C	9604S - 32C	Not Used	Not Used	
	CN351 (Connector 30P)	Not Used	Not Used	9604S - 30C	9604S - 30C	
	JA391, JA392	RKN1004	Not Used	RKN1004	RKN1004	
	S5 Voltage Selector	No Used	Not lead	BSB1008	1911122	•

3. SCHEMATIC DIAGRAM

2

3



PCB DIAGRAM

	PD-M403/RD RDXJ	OTHERS
W114	Not Used	Used
W115	Used	Not Used
W109	Not Used	Used

	PD-M423/WPW	OTHERS	
w 182	Used	Not Used	
W 183	Not Used	Used	
W203	Not Used	Used	
W309	Not Used	Used	

NOTE FOR PC8 DIAGRAMS:

- 1. Part numbers in PCB diagrams match those in the schematic
- diagrams.

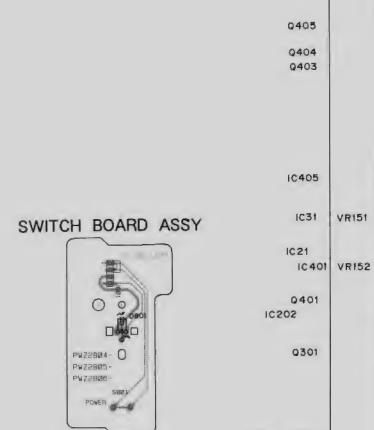
 2. A comparison between the main parts of PCB and schematic diagrams is shown below.

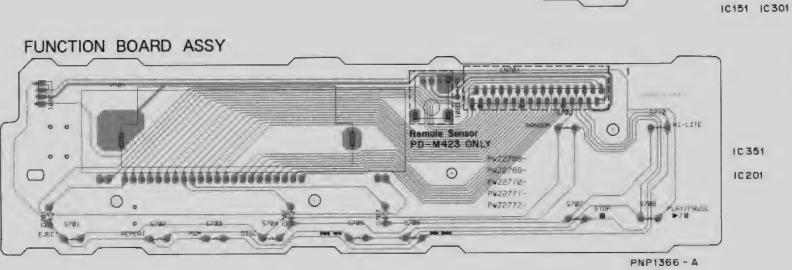
Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
(O O O) B C E	BCEBCE	Transistor
€ (0 0 0) B C E	B C E B C E	Transistor with resistor
000 DGS		Field effect transistor
(000 <u>%000</u>)		Resistor array
000		3- terminal regulator

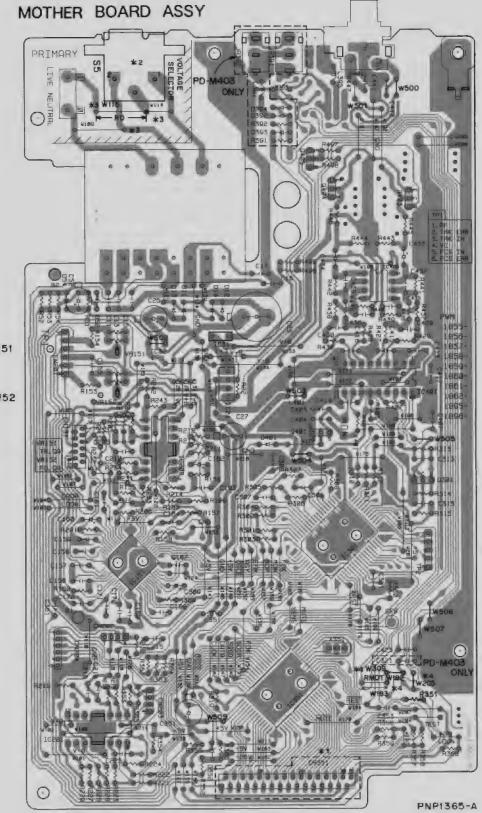
• This diagram is viewed from the mounted parts side.

	PD-M423	PD-M403
CN351	96045-32C	96045 - 300
CN701	96045-32F	9604S - 30F

* 2 : PD-M403/RD, RDXJ ONLY







10

MOTHER BOARD ASSY

0405 9404 0403

VRIST

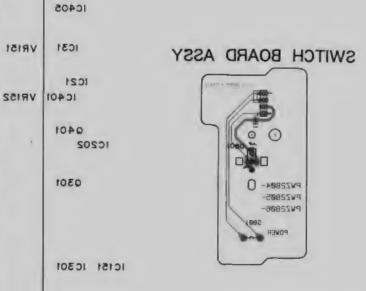
. This diagram is viewed from the foll side.

		* 1	
PD-M403	PD-M423		отнева
96045 - 30C	96045-32C	CN351	
96045 -30F	96045-32F	CN701	Used
			Not Used

* 2 : PD-M403/RD, RDXJ ONLY

		~ -
отнекѕ	PD-M403/RD RDXJ	
Used	Not Used	W114
Not Used	Used	W115
Used	Not Used	W109

PD-M423/WPW OTHERS Not Used W182 Not Used W183 Used Not Used W203 Not Used W309



FUNCTION BOARD ASSY 10351 0 00 \$35555555555555555555 10201 PMES771. PNP1366 - A

0

11

PNP1365-A



Service Manual

ORDER NO. **RRV1236**

MULTI COMPACT DISC PLAYER

1423 PD-M403

Refer to the service manual RRV1062 for PD-M423/KUXJ.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type		del			
туре	PD-M423	PD-M403	Power Requirement	Remarks	
WEMXJ	0	0	AC220V - 240V		
WPWXJ	0	-	AC220V - 240V		
WLXJ	-	0	AC220V - 240V		

1. SAFETY INFORMATION

- (FOR EUROPEAN MODEL ONLY) -

VARO!

AVATTAESSA JA SUOJALUKITUS
OHITETTAESSA OLET ALTTIINA
NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.
ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING
NÅR SIKKERHEDSAFBRYDERE ER UDE AF
FUNKTION UNDGÅ UDSAETTELSE FOR
STRÅLING.

VARNING!

OSYNLIG LASERSTRÄLNING NÄR DENNA
DEL ÄR ÖPPNAD OCH SPÄRREN
ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.



LASER Kuva 1 Lasersateilyn varoitusmerkki

- WARNING! ~

DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.



LASER
Picture 1
Warning sign for laser radiation

- IMPORTANT -

THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS —
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK (MULTI MAGAZINE type)

WEMXJ type

VARO!

Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilyile. Älä katso säteeseen.

Osynlig laserstrålning när danna del är oppnad och spärren är urkopplad. Betrakta ej strålen.

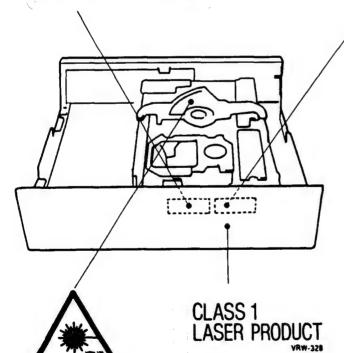
WEMXJ type

ADVARSEL USYNLIG LASERSTRÄLING VED ABNING MAR SIKKERHED SAF-BRYDERE ER UDE AF FUNKTION. UNIGÄ UDSÆTTELSE FOR STRÄLING.

VORSICHTIUNSICHTBARE LASER-STRAMLUNG TRITT AUS, WEINI DECKEL
(DOER KLAPPE) GEÖFFRET ISTI NICHT DEM STRAML AUSSETZEN

WLXJ type

CAUTION
INVISIBLE LASER
RADIATION WHEN OPEN,
AVOID EXPOSURE
TO BEAM PRW1018



WEMXJ and WLXJ types

- Additional Laser Caution

1. Laser Interlock Mechanism

The ON/OFF (ON: low level, OFF: high level) status of S601 (LPS1) and S602 (LPS2) switches for detecting the loading state is detected by the system microprocessor, and the design prevents laser diode oscillation except when both switches S601 and S602 are ON (low level or clamped state).

Thus, interlock will no longer function if switches S601 (LPS1) and S602 (LPS2) are deliberately shorted (low level). The interlock also does not function in the test mode *.

Laser diode oscillation will continue, if pin 1 of M51593FP (IC101) on the PRE AMP BOARD ASSY mounted on the pickup assembly is connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

- 2. When the cover is opened with the servo mechanism block removed and turned over, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.
- * Refer to page 26 on the service manual RRV1062.

WEMXJ and

WLXJ types

2. CONTRAST OF MISCELLANEOUS PARTS

NOTES:

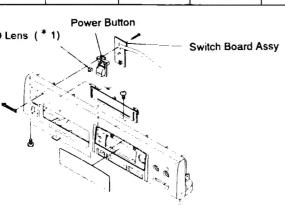
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

CONTRAST OF PD-M423/WEMXJ, WPWXJ, PD-M403/WEMXJ, WLXJ and PD-M423/KUXJ

PD-M423/WEMXJ, WPWXJ, PD-M403/WEMXJ, WLXJ and PD-M423/KUXJ have the same construction except for the following.

				Part No.			
Mark	Symbol & Description	PD-M423/ KUXJ	PD-M423/ WEMXJ	PD-M423/ WPWXJ	PD-M403/ WEMXJ	PD-M403/ WLXJ	Remarks
Δ	Mother Board Assy	PWM1858	PWM1896	PWM1896	PWM1895	PWM1895	
NSP	Sub Board Assy	PWX1336	PWX1337	PWX1337	PWX1335	PWX1335	
	Function Board Assy	PWZ2769	PWZ2769	PWZ2769	PWZ2768	PWZ2768	
NSP	Switch Board Assy	PWZ2804	PWZ2805	PWZ2805	PWZ2805	PWZ2805	
⚠	Power Cord with Plug	PDG1015	PDG1003	RDG1022	PDG1003	PDG1003	
A	Strain Relief	CM-22C	CM-22B	CM-22B	CM-22B	CM-22B	
A	Power Transformer (AC120V)	PTT1237	Not Used	Not Used	Not Used	Not Used	
⚠	Power Transformer (AC220 - 240V)	Not Used	PTT1236	PTT1236	PTT1236	PTT1236	
	32P F.F.C/30V (J701)	PDD1041	PDD1041	PDD1041	Not Used	Not Used	
	30P F.F.C/30V (J701)	Not Used	Not Used	Not Used	PDD1049	PDD1049	
	Display Window	PAM1635	PAM1671	PAM1635	PAM1670	PAM1634	
	Function Panel	PNW2387	PNW2567	PNW2388	PNW2566	PNW2390	
	LED Lens	Not Used	PNW2019	PNW2019	PNW2019	PNW2019	* 1
NSP	Rear Base	PNA2068	PNA2199	PNA2202	PNA2198	PNA2203	
	Foot Assy	AEC1531	Not Used	AEC1531	Not Used	AEC1531	
	Rubber Sheet	AEB1111	Not Used	AEB1111	Not Used	AEB1111	
	Insulator	Not Used	PNW1912	Not Used	PNW1912	Not Used	Front and Rear Le
	65 Label	ORW1069	Not Used	Not Used	Not Used	Not Used	
	Caution Label	Not Used	VRW1094	Not Used	VRW1094	PRW1018	Refer to page 2
NSP	Caution Label (F)	Not Used	VRW-328	Not Used	VRW-328	VRW-328	Refer to page 2
	Caution Label (G)	Not Used	VRW-329	Not Used	VRW-329	VRW-329	Refer to page 2
	Caution Label HE	Not Used	PRW1233	Not Used	PRW1233	Not Used	Refer to page 2
	Connection Cord with Mini Plug (for SR cord)	PDE-319	Not Used	Not Used	PDE1247	PDE1247	
	Connection Cord with Pin Plug (for AUDIO)	PDE1109	PDE1248	PDE1248	PDE1248	PDE1248	
	Remote Control Unit	PWW1107	PWW1107	PWW1107	Not Used	Not Used	
	Battery Cover	PZN1010	PZN1010	PZN1010	Not Used	Not Used	
	Battery (R03, AAA)	VEM-022	VEM-022	VEM-022	Not Used	Not Used	
	Operating Instructions (English)	PRB1231	PRB1231	PRB1231	PRB1231	Not Used	ļ
	Operating Instructions (French/German/Italian/Dutch/ Swedish/Spanish/Portuguese)	Not Used	PRD1004	Not Used	PRD1004	Not Used	
	Operating Instructions (English/Spanish/Chinese)	Not Used	Not Used	Not Used	Not Used	PRE1214	
	Packing Case	PHG1999	PHG2108	PHG2120	PHG2107	PHG2121	

EXPLODED VIEWS



MOTHER BOARD ASSY

PWM1896, PWM1895 and PWM1858 have the same construction except fot the following:

			Part No.		
Mark	Symbol & Description	PWM1858	PWM1896	PWM1895	Remarks
IC	C31	Jumper	ICP-N10	ICP-N10	.2
D	391	1SS254	Not Used	Nto Used	
	0392 - D394	1SS254	Not Used	1SS254	-
L	351	LAU100K	LAU100J	LAU100J	1
L	391	LAU010K	Not Used	LAU010J	
[C	29, C302	Not Used	CFTYA104J50	CFTYA104J50	* 2
0	321	CCCSL101J50	Not Used	CCCSL101J50	
0	410	Not Used	CCCSL101J50	CCCSL101J50	* 2
A	316	Not Used	RD1/6PM471J	RD1/6PM471J	* 2
R	1351	Not Used	RD1/6PM471J	RD1/6PM471J	• 2
R	391	RD1/6PM244J	Not Used	RD1/6PM244J	
R	1392	RD1/6PM102J	Not Used	RD1/6PM102J	
C	N351 (Connector 32P)	9604S - 32C	9604S - 32C	Not Used	
C	N351 (Connector 30P)	Not Used	Not Used	9604S - 30C	
J	A391, JA392	RKN1004	Not Used	RKN1004	

Note: * 2: Refer to " 3. SCHEMATIC DIAGRAM " and " 4. PCB DIAGRAM ".

FUNCTION BOARD ASSY

PWZ2768 and PWZ2769 have the same construction except for the following:

		Part	No.	
Mark	Symbol & Description	PWZ2769	PWZ2768	Remarks
	CN701 (Connector 32P) CN701 (Connector 30P) Remote Sensor	9607 - 32F Not Used SBX1785 - 51	Not Used 9607S - 30F Not Used	

SWITCH BOARD ASSY

Ì		Part	No.	
Mark	Symbol & Description	PWZ2804	PWZ2805	Remarks
	D801	Not Used	PCX1019	• 2

Note: * 2: Refer to " 3. SCHEMATIC DIAGRAM " and " 4. PCB DIAGRAM ".

FUNCTION BOARD ASSY

SYO? EJECT

SYO? REPEAT

SYO? REPEAT

SYO? RECARM

SYO. STOP

SYO. STOP

SYO. HILLIE SCAN

HALDOM

 SMITCHES (Underline indicates switch position): 8. SCH—IJ ON THE SCHEMATIC DIAGRAM:

• SCH—I] indicates the drawing number of the schematic diagram (SCH stands for schematic diagram)

6. VOLTAGE AND CURRENT

DC voltage (V) in PLAY mode unless otherwise noted

> mA or · mA ·

DC current in PLAY mode unless otherwise noted

Value in { } is DC current in STOP mode

4. CAPACITORS.
Unit p:pF or µF unless otherwise noted
Raings: capacitor (µF); voltage (Y) unless otherwise noted.
Raind voltage 50V except for electrolytic capacitors

3 HESISTORS.

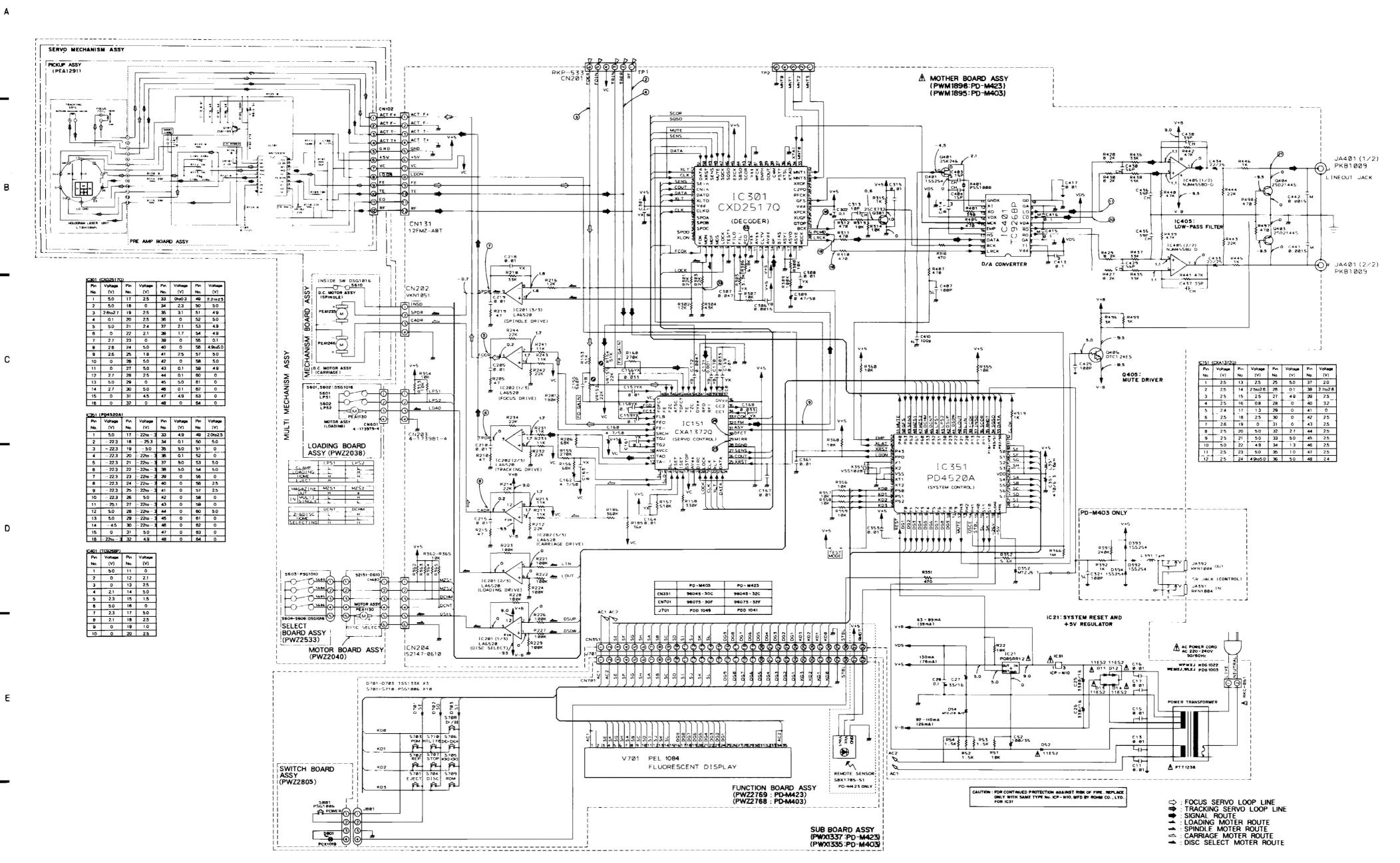
Unit k, KQ, M·MQ, or Q unless otherwise noted following for the moted following (G) ±2%, (K) ±10%, (M) ±20% or ±5% unless otherwise noted following (F). ±1%, (G) ±2%, (K) ±10%, (M) ±20% or ±5% unless otherwise noted

 Since these are basic circuits, some parts of them or the values of some components may be changed for improve-ment. "TSIJ STAA9

1. When ordering service parts, be sure to refer to "PRRTS LIST of EXPLODED VIEWS" or "PCB pages 151. NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

PD-M423, M403

3. SCHEMATIC DIAGRAM



F

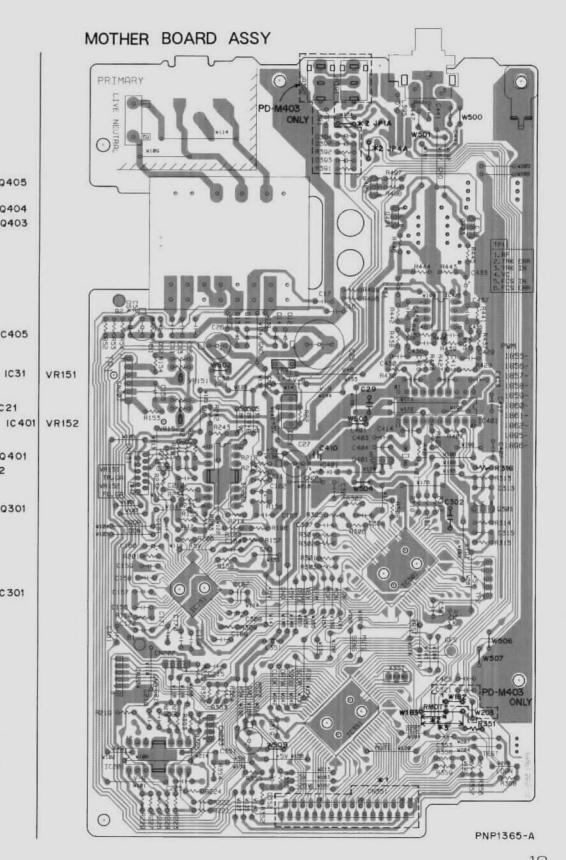
9

	PD-M423	PD-M403
CN351	9604S - 32C	9604S - 30C
CN701	9607S - 32F	9607S - 30F

* 2 : PD-M423 ONLY

* 3 : PD-M403 ONLY

diagrams.	CB diagrams match those in the main parts of PCB to below. Symbol in Schematic Diagrams		
0 0 0 B C E		Transistor	
●○○○ B C E	BCEBCE	Transistor with resistor	SWITCH BOARD ASSY
0 0 0 D G S		Field effect transistor	
<u>(000∭000</u> 0		Resistor array	
000		3- terminal regulator	PWZ2804- O PWZ2805- PWZ2806-
		*	POVER S821



00 9000000000000000000000

Remote Sensor PD-M423 ONLY

Q405

0404 0403

10405

IC31

IC21

0401

Q301

10202

IC151 IC301

IC 351

10201

PNP1366 - A

PD-M423, M403

0405

0404 0403

IC405

1031

1021

0401

9301

10202

10151 10301

IC351

10201

MOTHER BOARD ASSY

4. PCB DIAGRAM

. This diagram is viewed from the foil side.

PD-M423	PD-M403
9604S - 32C	9604S - 30C
9607S - 32F	9607S - 30F

* 2 : PD-M423 ONLY * 3 : PD-M403 ONLY

PRIMARY VR151 IC401 VR152

SWITCH BOARD ASSY PWZ2805-PWZ2806-

FUNCTION BOARD ASSY -----1772779-

PNP1366 - A

11

PNP1365-A

0

0

8

0